A STUDY ON

AZHAL KEEL VAYU

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This Certificate is awarded to Dr C. GNANAPONMALAR

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CONTENTS

INTRODUCTION

Siddha medicine is one of the most antiquated traditional medical systems with codified references from age old literature. It surfaced more than 2500 years ago. Siddha system of medicine is based upon panchaboothas (5 elements) mukkutram (tridosha) theory & sapthathadu theory. Panchaboothms & mukkutram are present in the 96 thathuvas which are basic principles of the medicine.

The medical system that blossomed at lemuria with the colour of tamil literature is called as siddha. Siddha system of medicine is one of the most old system of medicine curing major diseases in a proper way without any harm and major toxic effects. This system of medicine cures diseases on the basis of dhosa's. The siddhar's who are the eminent founders of this ancient system had written various types of medicines to cure the variation in the dhosas.

When the normal equilibrium of 3 humors (vadha, pittha, kaba) is disturbed, disease occurs.. The factors which affect this equilibrium are environment, climatic conditions, diet, physical activities & stress. Under normal conditions the ratio between these three humors (vadha, pittha, kaba) is 1:1/2:1/4 respectively. According to the siddha medicine system diet & life style plays a major role. This concept of siddha medicine is termed as pathya & apathya.

The drug used by the siddhars could be classified into 3 groups:

- Thavaram (herbal product)
- Thathu (inorganic substance)
- Jeevam (animal products)

According to their mode of application the siddha medicine could be categorized into two classes.

- Internal medicine – used through oral route & further classified into 32 categories based on their form , methods of preparation.
- External medicine – it includes certain forms of drugs & also certain application like nasal , eye ,ear drops & also certain procedures like leech application, purgative therapy, emetic, fasting, steam, physical therapies, solar therapies, bloodletting, yoga,thokkanam,ottradam etc.

Osteo arthritis also known as degenerative arthritis or degenerative joint disease or osteoarthrosis is a group of mechanical abnormalities involving degradation of joints including articular cartilage & subchondral bone. Symptoms may include joint pain, tenderness, stiffness, locking & sometimes an effusion. A variety of causes – hereditary, developmental, metabolic & mechanical may initiate processes leading to loss of cartilage. When bone surfaces become less well protected by cartilage, bone may be exposed & damaged. As a result of decreased movement secondary to pain, regional muscles may atrophy & ligaments may become more lax.

Treatment generally involves a combination of exercise, lifestyle modification & analgesics. Azhal keel vayu is the most common problem of elder person.

For this reason I have chosen Azhal keel vayu.My trial drug is KARUNGOZHI CHOORANAM as internal medicine and VIDAMUTTI THYLAM as external medicine.

AIM AND OBJECTIVES

AIM:

The aim of this dissertation is to bring out the most treatable drug without side effects from siddha system of medicine for “Azhal keel vaayu”.

OBJECTIVES:

Primary objectives:

To evaluate the clinical efficacy of Karungozhi Chooranam as internal medicine and Vidamutti Thylam as external medicine for the disease “Azhal keel vaayu”.

Secondary objectives:

- To study the efficacy of sirappu maruthuvam techniques like varmam, aasanas and external therapies like thokkanam(massage) and ottradam(fomentation) which are useful in treating “Azal keel vaayu” along with internal and external medicine.
- To collect the evidences found in siddha literature for “Azhal keel vaayu”.
- To confirm the diagnosis in siddha system with the help of modern parameters.
- To compare the clinical features given under Azhal keel vaayu with the features of osteoarthritis.
- To know the chemical and pharmacological analysis of the selected drug.

SIDDHA ASPECT

“தமிழ் மண்டலமைந்துந் தாவிய ஞானம்

உமிழ்வது போல வுலகந் திரிவார்

அவிழு மனமுமெம் மாதி யறிவுந்

தமிழ்மண் டலமைந்துந் தத்துவ மாமே”

- **திருமந்திரம்**

பன்னீராயிரம் ஆண்டுகட்கு முன் தோன்றி சித்தாந்த பேரறிவியலுக்குத் துணையாக தோன்றி சித்த மருத்துவம் அப்பேரறிவிலை வரைந்த சித்தர்களே வழைரந்து, எம்மக்களும் அதனைக் கற்றறிருந்து நீடுழி வாழச் செய்தரென்பது மிகையாகா.

“வீர மருந்தென்றும் விண்ணோர் மருந்தென்றும்

நாரி மருந்தென்று நந்தி யருள் செய்தான்

ஆதி மருந்தென் றறிவா புகலிடஞ்

சோதி மருந்திது சொல்லவொண் ணாததே”

தமிழ்நாட்டில் தோன்றிய மொழி, பேரறிவியல், மருத்துவம் ஆகியவை சிவனால் செய்யப்பட்டவை எனக் கூறி அதை சிவன் நந்திக்குக் கற்பித்தான் எனவும், நந்தி திருமூலர்க்கும், திருமூலர் மற்ற சித்தர்க்கும் கற்பித்தாரென ஒரு சாரார் கூறுவர். இவ்வாறு பெறப்பட்ட சித்த மருத்துவரின் இயல்பாக அகத்தியர் பின்வருமாறு கூறுகிறார்.

“உத்தம குணங்க ளுள்ளோன்

உயர்பெருங் கீர்த்தி யுள்ளோன்.

புத்தியா லாய்ந்து சொல்வோன்.

பொருள்களையாய வல்லோன்

சத்திய வார்த்தை யுள்ளோன்

தரும சிந்தனையே யுள்ளோன்

குத்திர வார்த்தை பேசாக்

குணன் பரிகாரி யாமே”

-அகத்தியர்.

மருத்துவனுக்கு மூன்று கண்கள் என்பதை கீழ்க்கண்ட அடியால் அறியலாம்.

“மூன்று கண்ணுள்ளோரிருவராம்

அன்ன வர்யா ரெனில்

ஆன்ற லோகமீன் றளிப்பவன்

ஆகிய வரனும்

தோன்ற மக்கடம் துயரினைப்

போக்கிடு வோனாம்

என்ற மாமருத் துவனுமே

என வியம்புவரே

மருத்தவனின் 3 கண்கள் எவை என்பதை

“மருந்து சுத்தி குண நிகண்டு கண்கள் மூன்றாம்”

1. Purification of medicine
2. Diagnosis of disease and character of medicine
3. The different nomenclature of medicine

“அண்டத்தில் உள்ளதே பிண்டம்

பிண்டத்தில் உள்ளதே அண்டம்”

-சட்டமுனி ஞானம்

In this sentence says that “Man is considered as the microcosm; Universe is considered as the macrocosm”. It shows that Human body is the replication of universe.

Universe made up of 5 elements i.e earth air, water, ether and fire. Human body also made up of this panchaboothas.

“Ik;g+jk; gj;jhf;fp”

This line says that one of the fire elements combined with the other four elements in different proportions to form the human body. These are the basic reason for “Urirthathu” This Uyirthathu divided into their thodas known as vatham, Pittham and kabam. Any deviation (or) derangement occur in this there Uyrithathu may produce “Disease”.

KEEL VAYU.

Other Names

According to siddha maruthuvam text book keel vayu mentioned as santhu vali, Mutthu vali, Meha soolai, Mudakku vayu and ama vatham.

- Vitiated vatha produces disease in keel (Joints) called as keel vayu.
- Pain in muttu (Joint) called as muttuvalli.
- Inability to use (mudakku) joints called as muddakku vayu,
- Improper digestion of food followed by increased kabam produces vadha disease called as “Amavatham”
- This disease followed by meha noi called as “mehasoolai”.

According to Agathiyar Gunavagadam keelavayu mentioned as:

“jhdhd fPy;thj Nuhfk; Ngiu

rhw;WfpNwd; ePawpa tpgukhf

khdhd tha;T Nuhfk; thjNuhfk;

kfj;jhd Klf;Ftha;T Klf;F thjk;

Njdhd re;jpf rpNyl;Lk Nuhfk;

njspthd iffhypy; gpbg;G Nuhfk;

Cdhd urthjk; R+iyf;fl;L

cj;jkNd re;jpthjk; thj R+iyahNk”

-mfj;jpah; Fzthflk;.

IYAL (DEFINITION)

Keel vayu in one of vatha disease which is characterised by swelling, pain, stiffness of the joints, difficulty to flex and extend the joint. This disease associated with fever when increased vatha is along with Kabam.

“tspA ikAe; jd;dpiy nfl;L

typAld; tPf;fr; RuKk; fha;e;J

Kl;Lf NlhWk; KLf;fpNa nehe;J

Kl;Lf ld;dpd; ePUk; Rue;J

jhq;nfhzh typAld; nehe;jpL kk;Nk”

-rghgjp ifNaL.

AZHAZ KEEL VAYU:

When it is Vatha vitiated, diet and habits which stimulates Pittha it will produce “Azhal Keel Vayu”.

NOI VARUM VAZHI: (AETIOLOGY)

1. Causes of ‘Keel Vayu” from Sabapathy Kaiyedu is as follows:

“ tspjU fha; fpoq;F

tiutpyh japyy; Nfhio

Kspjaph; Nghd;kpFf;F

Kiwapyh Tz;b Nfhly;

FspHjU tspapw; Nwfq;

Fdpg;Gw Tyty; ngz;bh;

fspj;jU Kaf;fk; ngw;Nwhh;

fbnray; fUtpahkhy;”.

Diet and health which gives rise to Vatha dhosa (i.e) excessive intake of potato like roots and banana, excessive intake of cold substances like curd, exposure to cold, staying in hill station which increase Kabam causes this disease. Further this disease is followed by mega noi and may be hereditary.

2. According to “Yugi Muni” Aetiology is defined as follows:

“ vd;dNt thjk; jhndz;gjhFk;
,fj;jpNj kdpjh;fSf; nfa;AkhW
gpd;dNt nghd;jiia NrhuQ;nra;J
nghpNahh;fs; gpuhkziu J~zpj;Jk;
td;dNjtw; nrhj;jpr; NrhuQ; nra;J
khjhgpjhFUit kwe;j Ngh;f;Fk;
fd;dNt Ntjj;ij epe;ij nra;jhy;
fhaj;jpw; fye;jpLNk thje;jhNd”

“jhnddw; frg;NghL Jth;g;Giwg;G
rhjfkha; neQ;Rf;fpDQ; rikj;j tz;zk;
Mndd;w thwpdJ nghrpj;jyhYk;
Mfhaj; NjwyJ Fbj;jyhYk;
ghndd;w gfYhwf;f kpuh tpopg;G
gl;bdpNa kftpWj;jy; ghunka;jy;
Njndd;w nkhopahh;Nkw; rpe;ijahjy;
rPf;fpukha; thjkJ nrdpf;Fe;jhNd”

- A+fpitj;jpa rpe;jhkzp

Intake of foods which are rich in taste like bitter, astringent and chilly, intake of old cooked foods, drinking of rain water, day time sleeping, awakening at night, starvation, excessive weight lifting and sexual perversion may produce Vadha disease.

3. In "Theraiyar Vagadam” the cause of Vadha disease is mentioned as follows.

“nta;apypy; elf;ifahYk; kpfj;jz;zPh; Fbf;ifahYk;
nra;apio kfspdiur; Nrh;e;jDgtpf;ifahYk;
igaNd cz;ikahYk; ghfw;fha; jpz;ifahYk;
ijaNy thjNuhfk; rdpf;F nkd;wwpe;J nfhs;Ns”.

- Njiuah; thflk;.

Walking on hot weather, excessive intake of water, over sexual indulgence, intake of bitter gourd may produce Vadha disease.

4. Another concept from “Pararaja Sekaram” denotes the causative factor of Vadha disease as follows.

“fhzNt kpfTz;lhYk; fUJgl;bdp tpl;lhYk;
khdid ahh;fz; Nkhfkwf;fpD kpFe;jpl;lhYk;
Mzt kyq;flk;ik aq;qNd tplhjyhYk;

thDjd; jley; yhNsthjq; Nfhgpf;Fk; fhNz”

Over eating, undue starving, sexual perversion, Anavamalam will produce vadha disease.

“ghhpdpw; gag;gl;lhYk; gyUld; Nfhgpj;jhYk;

fhundf; fUfpNahbf; fOkuj; Juj;jpdhYk;

Vh;ngW jdJ neQ;rpd; kpfj;Jf;f kile;jpl;lhYk;

ghhpa fw;wpdhYk; glhpDk; thjq;fhZk;”

Fear, anxiety, tension, stress will lead to Vadha disease.

5. In Agathiyar Kanma Varalaru – 300, Vadha disease is to be considered as one among the Kanma noi,

“E}nyd;w thjk; te;j tifjh NdJ

Ez;ikaha; fd;kj;jpd; tifiaf; NfS

fhypNy Njhd;wpa fLg;Ng NjJ

iffhypy; Klf;fpaJ tPf;fNkJ

NfhypNy gLf;fpd;w tpUl;rkhd

Foe;ij kue;jid ntl;ly; Nky;Njhy;rPty;

ehspNy rPtnre;Jfhy; Kwpj;jy;

ey;y nfhk;Gjio Kwpj;jy; eypj;jy;jhNd"

- mfj;jpah; fd;k tuyhW – 300

6. Vadha disease followed by Meha noi and Ama Vatham

7. Food Variations:

Diet plays a vital role in preserving the human body. The food is formed on the basis of 6 tastes.

“GspJth; tpQ;Rq;fwp ahw;G+hp f;Fk; thjk;”

- fz;Zrhkpak;.

Sour and astringent taste causes an increase in Vadham.

8. Environmental change:

The environmental factors (Thinai) may also pave the way for the development of disease.

Neithal: People of this land suffer from Vadha diseases. Further it leads to increased body mass, enlargement of liver and flatulence.

Palai: The people of this land suffer from disease of 3 thoshas.

9. Seasonal Variations:

Due to seasonal variations changes in thridhosa occur which leads to disease.

“thjth;j;jd fhyNkNjh ntd;dpy;

kUTfpd;w Mdp fw;fl khjk;

Mjidg; grpNahL fhh;j;jpif jd;dpy;

mlUNk kw;w khjq;fs; jd;dpy;

NghfNt rkpf;fpd;w fhykhFk;"

Vadha disease most common in the months from Aani to Karthikai.

In Muthuvenil Kalam (Aani and Aadi) Vadham gets aggrevated.

In Kaar Kalam (Avani and Puratasi) – Vadham in increased state.

NOI ENN (Classification)

Keelvayu is Classified into 10 types

- Valikeel Vayu
- Azhalkeel Vayu
- Iya Keel Vayu
- Vali azhal Keel Vayu
- Vali iya keel Vayu
- Azhal vali keel Vayu
- Azhal iya keel Vayu
- Iya vali Keel Vayu
- Iya azhal Keel Vayu
- Mukkutra keel Vayu.

SIDDHA ASPECT

“PATHOLOGY OF KEEL VAYU”.

“tspA ikAe; jd;dpiy nfl;L” – rghgjpifNaL.

I. VITATED DHOSHA OF VADHA:

“gpzpapDw; gj;jpiag; NgRtd; gpzpKjy;
thj gpj; jq;fg kd; ke;jphp je;jphp
tPjkh Alyuz; nka;k;Gu tuR nra;
Kiw nrAkhjyhd; ……..”

- Njiuah; fhg;gpak;.

According to Siddha aspect, Vatham is the initiator of all the activities of our body. So Theran said Vatham as "Arasan" in the above lines.

"Azhal Keel Vayu" is described in Sarabentthier Kaiyedu Nool. It is the most common Vadha disease. Incresed Vatha may produce pain, stiffness, deformity which is dealed on below siddha books.

1. “Fwpnadf; iffhy; Fsr;R tpyhr; re;J
   gwpnad nehe;Jlw; gr;irg; Gz;zhFk;.
   -jpU%yh;.
2. “nrhy;yNt thjkJ kPwpw; whdhy;
   Nrhh;tile;J thAtpdhy; Njfnkq;Fk;
   nky;yNy iffhy;f srjp Az;lhk;
   nka;Klq;Fk; epkpunthz;zh jpkpUz;lhFk;”
   - mfj;jpah;
3. “fhNzg;gh thj kPwpy;
   fhy;iffs; nghUj;jp NehFk;”
   - fhtpaj;jpd; ehb.
4. “Nktpa thjQ; nra;Aq;
   Fzq;jid tpUk;gpf; NfS
   jhtpa tapW ke;jQ;
   re;Jfhy; nghUe;J Nehthk;”
   - ,uj;jpdr; RUf;fk; ehb.

Increased Vadha produces 6 characteristic features.

“thjq; fLik twl;rpAld; neha;ik
rPjQ; rydk; rpjwZT – VjKl
dpf;Fzj;Njh Lw;Nw apaf;fe; jUkstpw;
wf;f ghpfhue; jh”.
- fz;Zrhkpak;.

1. fbdk;
2. twl;rp
3. ,NyR
4. Fsph;r;rp
5. mirjy;
6. mZj;Jtk;.

We could take two characteristic features from above song.

1. twl;rp – Dryness.

   The fluid around the joint is dried. It is compared to modern pathology, which says that some protective factors which protect the cartilage from aging process. Normal cartilage has 2 main components.

   1. Extracellular Matrix
   2. Aggrecan contains glucosaminoglycans chain of chondroitin sulphate and keratin sulphate that is capable of retaining water.

      During aging, quantitative and qualitative changes in aggrecan reduce the capacity of the molecules to retain water. thus aged cartilage contains less water.

2. mirjy; - Movements.

In Azha keel Vayu, increased vadha produces restricted movements. This is mentioned in sabapathy kaiyedu as follows.

“ Kl;Lf NlhWk; KLf;fpNa nehe;J”

VITIATED DHOSHA OF KABAM:

“ tspA ikAe; jd;dpiy nfl;L…..”

- rghgjp ifNaL.

When vadha is increased along with vitiated kabam dhosham produces pain, stiffness, swelling and restricted movement.

Nature of Iyam:

“jplkPA nkd;gpizg;Gj; jpz;ikAw;w ahg;Gk;

mlNyh; tOtOg;Gk; Mf;iff; fplh;f;F

ntUthg; nghWikAk; NkNyhd fhg;ghk;

ngUikj;jh ikankdg; NgR"

- kUj;Jt ghujk;

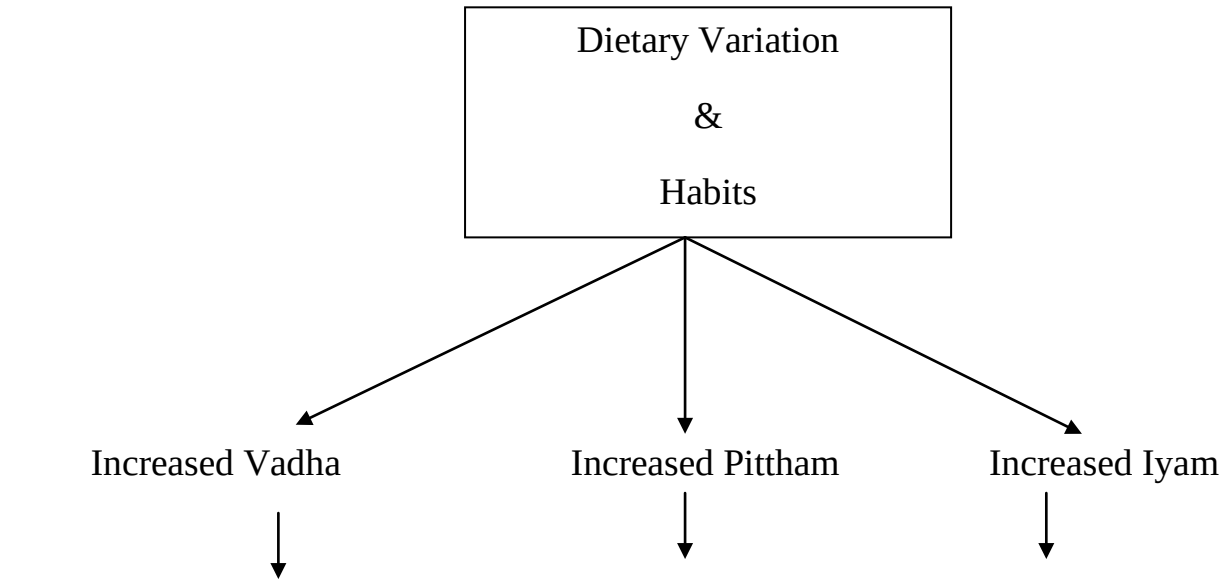
In this song nature of Iyam was described. They are:

1. Steadiness (Nilaitthal)
2. Lubrication (Neippu)
3. Structure of joints
4. Patience (Poraiyudaimai)

One of the 5 types of Iyam **santhigam** act as a lubricator for mobilization of joints.

“ %l;Lf ld;dpd; ePUk; Rue;J”

This line denotes increased Iyam leads to swelling of joints



★ Pain ■ Fever ▲Swelling

★ Stiffness

★ Restricted Movement

Diet and habits which increase the Pittham along with vitiated Vadha dhosam may produce this disease.

CLINICAL FEATURES :

“gpj;jf;fPy; tha;T jd;dhw;

gpwq;FfPd; %l;L tPq;fpr;

rpj;jh;nra; kUe;J tj;JQ;

rPh;glhj; jd;ikj; jhfpj;

jj;JW fha;r;ry; fz;L

rhyNt jidjhd; je;Nj

nkj;jW rpfpr;ir jd;dhy;

nkd;Nky; ePq;F kg;gh”

- Swelling of the joint
- Fever
- Restricted movement
- Swelling of the joints will increased day by day. Increased Pittham act as synovid theid between the joint space which dries it. It make sound like “Kaluk, Kaluk” when the movement of the joint. Sometimes it may cause inable to move the joints.

MUKKUTRA VERUBADUGAL

In Azhal keel vayu the following vayus are affected.

Vatham	**Physiological function**	**Feature in Azhal keel vayu**
Pranan	Maintain the cardiac function,respiration	Normal
Abanan	Act with downward movement	Constipation present
Viyanan	Helps in various movements of body, responsible for sensation	Restricted movements of the joints

Samanan	Regulates all other vayus	Affected
Nagan	Responsible for intelligence Helps in opening and closing of eyes	Normal
Koorman	Responsible for lacrimation. Helps in visualization of all things of world	In aged patients acuity of vision is diminished.
Kirukaran	Produce cough and sneeze,helps in digestion	Normal
Thevathathan	Responsible for laziness, rotation of eye balls	Sleeplessness due to pain
Thananjeyan	It leaves from the body by blowing up the cranium only on the 3rd day after death.	–

Pittham

Pittham is a force of heat, God to all disease, mother to dasha vayukkal, assistant to boothas and responsible for fever.

Anar pitham	Digests all the ingested particles	Affected
Ranjaga pitham	Increase the blood and gives colours to blood	Affected
Saathaga pitham	Makes the work to complete what mind thinks to do	Affected. restricted movement
Aalosaga pitham	Responsible for vision of eyes	Affected in old age people
Prasaga pitham	Gives colours to skin	Not affected.

Kabam

It is classified into five types

Avalampagam	Controls other 4 types of kabam	Affected
Kilethagam	Moistness the food	Affected
Pothagam	Helps to know the taste	Normal
Tharpagam	Gives cooling to the eyes	Normal
Santhigam	Gives lubrication of joint	Affected

Udal Thathukkal

There are seven udal thathukkal in human body.

Saaram	Strengthens the body and mind	Affected
Senneer	Preserves brightness, boldness power and knowledge	Affected
Oon	Gives structure and shape to body. Responsible for movement	Early stage – not affected. Later stage – Affected
Kozhuppu	Lubricate the joints	Affected
Enbu	Responsible for joint movement	Affected
Moolai	It is present in the bones and gives strength	Affected
Sukkilam or Suronitham	Meant for reproduction	Normal

DIFFERENTIAL DIAGNOSIS :

1) AGATHIYAR AYUL VETHAM-1200

“**முழங்கால் வீங்கிக்** கடுத்து நொந்து மோதித்திரண்டு வேதனையாய்
வழங்காதென்ன நடைகட்டு வருத்தமிகவுந் தானுமுண்டாய்”

-அகத்தியர் ஆயுள்வேதம் 1200 பாடல் 296.

2) THERAIYAR VAGADAM

“**முழங்கால் வாதங்**கனத்து வீக்கமாகி முசியாமல்

கடுத்து நடக்கொட்டாதென்று”

-தேரையர்வாகம் பாடல் 217.

3) PARA RASA SEKARAM –VATHA ROGA NITHANA CHIKITCHAI

“திரண்டிடு **முழங்கால் வீங்கிச்** சேர நொந்துளைந்து குத்திப்

புரண்டிட மடக்கி மிண்டிப் போதவே நடைகொடாது

மருண்டுவேல் கணைமானம்பு வாளென மிளிருங்கண்ணாய்

முரண்டரு **முழங்கால்** தன்னின் மொழிந்துடு வாதமாமே”

-பரராசசேகரம் பாடல் 182

4) NARI VATHAM :

“நடந்திடின் **முழங்கால்** வீங்கி நடுக்கென குத்தி வாங்கித்

துடர்ந்துடன் பிடித்து மிண்டித் துடித்துடனடுக்கமுண்டாம்

அடர்ந்திடும் வயிற்று நோவா யதிகமாய்த் திரண்டேயறும்

படர்ந்திடு நரிவாதத்தின் குணமெனப் பகர்ந்தாரன்றே”

- பரராச சேகரம் வாதரோகம் பாடல் 209.

5) NARITHTHALAI VATHAM :

மூர்க்கமா முயன்று **முழங்கால்தான்** வீங்கி முதிர்ந்து

ரத்தமுந்திரண்டு முயற்சியாகி

நிக்கமாய் நின்றிட வொணமற் தாணும் நிமிர்ந்திடுகில்

சந்துதான் முடக்கொணாமல்

தீர்க்கமாய் துண்டித்து மிகச்சிக்கென்று செழுமை

நரித்தலைபோல மிகவே வீங்கி

நார்க்கமாய் நாடியுமே படபடக்கும் நரித்தலையின்

வாதமென்றே நவிலலாமே”

-யூகிவைத்திய சிந்தாமணி800 பாடல் 263.

6) UTHIRA VATHA SURONITHAM :

“வைகிதமாய்க் கணைக்காலு **முழங்கால்** தானும்

மற்காடஞ்சந்து புறவடியும் வீங்கிச்

செய்கிதமாஞ் சிறுவிரல்கள் மிகவும் நொந்து சிந்தை

தடுமாறியேசலிப்புண்டாகும்

பைகிதமாம் தடுமாறியே சலிப்புண்டாகும் பாராமாய் உற்பவித்து அழலுண்டாகும்

உய்கிதமாம் அசனது தானும் வேண்டா உதிரவாதச் சுரோணிதத்தி

னுணர்ச்சியாமே”

-யூகி வைத்திய சிந்தாமணி 800 பாடல்:319

7) PAYITHIYA VATHA SURONITHAM :

“உணர்ச்சியாய்ச் சுரோணிதந்தான் மிகவெதும்பி ஊக்கமாய்த் தேமெங்கும்

மிகவேநொந்து

முணர்ச்சியா **முழங்கால்கள்** முழங்கையொக்க முனையான சிறுவிரல்கள்

கன்னம்நெற்றி

தணர்ச்சியாய்ச் சந்து சருவாங்கமெங்கும் தாட்டிகமாய்க் குடைந்து சுரமுமுண்டாம்

பணர்ச்சியாய் பாண்டது போன்மேனியாகும் பயித்தியவாத சுரோணிதத்தின்

பண்புதானே”

- யூகி வைத்திய சிந்தாமணி 800 பாடல்:320

8) MEGA VATHAM :

“முடக்கியே **முழங்கால்** வீங்கி முதிர்சல மோதாய் வீழும்

தடக்கியே நடைகொடாது தந்துபோற் சியலுமுண்டாம்

வீடக்கயல் வடுமானம்பு வேலென மிளிருங்கண்ணாய்

மடக்கிய மேகவாதஞ் செய்குணம் வகுக்கலாமே”

- பரராசசேகரம் வாதரோகம் பாடல்-197.

9) SURONITHA SILETPAM :

“உண்மையாய் **முழங்காலில்** மிகக்குடைந்து உளைந்துமே முதுகோடு

விலாப்பக்கங்கள்

கண்மையாய் முழங்கைகள் முழங்கைச்சந்து கடினமாய் வீங்கியே

குடைச்சலுண்டாம்

தண்மையாய் சளிக்கட்டுத் தாகமாகும் சாதகமாய் இருமியே மூச்சுண்டாகும்

திண்மையாய் நாவரண்டு சித்திப்பாகும் செயமான சுரோணித சிலேட்பந்தானே”

- யூகி வைத்திய சிந்தாமணி பாடல் 415.

10) MUZHAANKALAL VATHAM :

“ திரண்டிடு **முழங்கால்** வீங்கிச் சேர நொந்துளைந்து குத்தியப்

புரண்டிட மடக்கி மிண்டிப் போதவே நடைகொடாது

மருண்டுவேல் கணைமானம்பு வாளென மிளிருங்கண்ணாய்

முரண்டரு **முழங்கால்** தன்னின் மொழிந்துரு வாதமாமே”.

- பரராசசேகரம் பாடல்-182.

PINIYARI MURAIMAI(DIAGNOSIS)

Piniyari muraimai is the methodology of diagnosing the disease in siddha system.

Envagai therugal:

'ehb];ghprk; eh epwk; nkhop tpop

kyk; %j;jpukpit kUj;Jt uhAjk;"

- Naadi(Pulse)
- Sparisam (sense of touch)
- Naa(Tongue)
- Niram(Colour)
- Mozhi(Speech)
- Vizhi(Eyes)
- Malam(Stool)
- Moothiram(Urine)

'nka;f;Fwp epwe;njhzp tpop ehtpUkyk; iff;Fwp"

1.Naadi (Pulse)

This is a unique diagnostic method in siddha system of medicine. It is responsible for existence of life. It is felt one inch below the wrist on the radial side by palpatcing with the top of the index finger, middle finger and ring finger which denotes vatham, pitham and kabam.

Suitable places for pulse reading:

'jhJ KiwNfs; jdpFjpr; re;njhL

XJW fhkpa Ke;jp neL khu;G

fhJ neL%f;Ff; fz;lk; fuk; GUtk;

NghJU cr;rp Gfo; gj;Jk; ghu;j;jpNl"

2.Sparisam(Sense of Touch):

The abnormal increased sparisam is clinically called as inflammatory changes.

Increased sparisam-Mithaveppam(warmth) felt on affected joints in Azhal keel vaayu.

3.Naa (Tongue):

Vadha disease	**Dark in colour**
Pitha disease	**Yellow in colour**
Kaba disease	**White colour**

In Azhal keel vaayu dark & dried tongue may be seen.

4.Niram (Colour):

The colour of the affected part and general colour of the body may be altered depends upon the severity of the disease.

In Azhal keel vaayu the affected to in red in colour.

5.Mozhi (Speech):

Speech will be affected in Vadha disease because of Piranan, Uthanan, Kirugaran and Devathathan are disturbed.

In Azhal keel vaayu decreased tone of speech because of the severity of disease.

6.Vizhi (Eyes):

Normaly vizhi affected in old age. In Azhal keel vaayu most commonly affected in elderly people.

7.Malam (Stools):

Constripation common is Vadha disease. In Azhal keel vaayu malam may be affected.

8.Moothiram (Urine):

The waste materials are executed through urine from the body.

In Azhal keel vaayu there will no specific change in neerkuri.

NEERKURI-NEIKURI:

In siddha system of medicine changes of urine is studied under two.

Peculiar headings. They are"Neerkuri and Neikuri":

'te;j ePu;f;fup vil kzk; vQ;rnyd;

iwe;jpaYit aiwFJ KiwNa"

- Njuu; ePu;Fwp - nea;Fwp

Neikuri:

- mwntd ePz;bd/Nj thjk;
- MopNghw; gutpd; m/Nj gpj;jk;
- Kj;njhj;J epw;fpd; nkhoptnjd fgk;

- Njuu; ePu;Fwp - nea;Fwp

This procedure is an important one in siddha system of medicine to find out the diagnosis as well as in prognosis aspect of the disease. So disease in man do not originate itself. It is developed from the alteration of three dhoses.

LINE OF TREATMENT

In Siddha system the main aim of the treatment is to cure Udar pini (due to Mukkutram) and Manapini (due to changes in Mukkunam). Treatment is not only for perfect healing but also for the prevention and rejuvenation.

Line of Treatment is as follows:

1. Prevention
2. Treatment

Prevention :

The prevention methods for Azhal keel vaayu are as follows:

1. Control the body weight.

2. Modify the nature of work.

    eg. Avoid prolonged standing and long distance walking.

3. Avoid excess intake of high coloric foods.

Treatment :

The aim of Neekkam is based on

To bring the deranged dhosams to normal equilibrium state.

First the deranged dhosams has to be brought to its normal state by giving Virechanam or Vamanam or Nasiyam.

1. Purgative :

'tpNurdj;jhy; thje; jhOk;"

In Azhal keel vaayu, vatha kuttram is deranged. So a purgative vellai ennai - 15 ml with hot water in early morning in empty stomach on the first day is given.

2. Internal Medicine :

Karungozhi Chooranam - 1.5gm / daily with hot water.

3. External Medicine :

Vidamutti thylam - External application.

4. Complementary Therapies :

There are enormous complementary therapies followed in Siddha system of medicine such as kattu, pattru, Nasiyam, Attai Vidal, Thokkanam, Ottradam, Varmam, Asanam, Vedhu etc.

COMPLEMENTARY THERAPIES:

I Thokkanam (Massage)

II Ottradam (Fomentation

III Kattu (Bandage)

IV Varmam

V Aasanam

I Thokkanam :

Massage is the manipulating of superficial and deeper layers of muscle and connective tissue using various techniques, to enhance function, aid in the

healing process, decrease muscle reflex activity, inhibits motor neuron activity and promotes relaxation and well being massage can be applied with the hands, fingers, elbows, knees, forearm and feet.

II Ottradam (fomentation)

Its is application of the hot or cold substances applied through packages In siddha literature lot of ottradam describe 2 types of otttradam applied in my study

I.Hot Formentation by medicated pouches

Dried leaf of nottri (ritex negundo) Thaluthalai Manjanathi (Moinda tinctoria) erukku (calotropis gigantean) which is stuffed in a cleaned doth it is tied tightly.

II.Hot Formentation by lemon

In this method lemon is cutted hafly Each pieck of lemon tied by a cloth and it is dipped in the hot trial drug and applied on the affected joints

III Kattu (Bandage)

The fresh Aadathodai (Justicia adathoda) leaves are made into pieces and it is mixed with external medicine This Kept in a piece of cotton and wrapped

THOKKANAM

FOMENTATION BY LEMON

FOMENTATION BY MEDICATED POUCHES

IV Varmam:

Varmam points to be manipulated for osteoarthrosis are as follows

1. **Mootu varmam :** Centre part of posterior apsect of both knee joints. Mild pressure is applied using tips of middle three fingers.
2. **Kuthiraimuga varmam**

   Location – Tibial tuberosity

   Pressure is applied for three time using bulb of thumb.

3. **Mootu Suzharchi**

   This method stimulates varmam points around knee joint by a circulatory gripping massage around patella using thumb and index finger.

4. **Santhuvarmam :**

   Location : on either side of the mootu varmam

5. **Sirattai varmam :**

   Location : on the patella bone.

6. **Mozhi poruthu varmam:**

   Location : Posterior surface of the knee joint

7. **Asaivu thiru kannu varmam:**

   Location : In centre of anterior surface, 2 finger breadth sidewards to the knee joint.

8. **Pathaippu Varmam:**

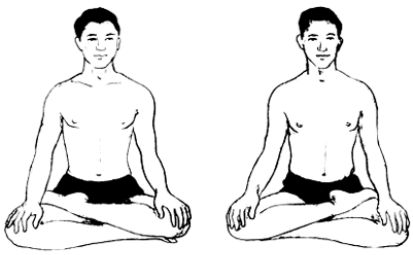
   Location : 6 finger breadth lateral to the patella.

V. Asanam :

Yogasanas are the well known procedures followed by our great siddhars for both preventing the body from degeneration and for curing and regenerate the body from ailments. Yogasana are followed as one of the important complementary therapy in the line of treatment for many diseases which are practiced worldwide now-a-days.

Padmasanam :

1. Fold the left leg in the knee and place the left foot against the right thigh.



2. Similarly fold the right leg in the knee and place the right feet on the left thigh.

3. Place the hands on the respective knees with case and sit erect.

Ukatasanam :

Stretch your arms, lengthen the spine and bend your knees and move your trunk forward at 45 degrees.

It usually strengthens the muscles of the legs particularly the quadriceps femoris.

Vajrasanam :

Fold both the knees, keep the joint with each other and sit on the pit formed by the heels, keep the spine, neck and head straight.

This pose increases the flexibility of the knee joint and reduces the stiffness of the knee joint.

Garudasanam :

1. From Ukatasanam shift your weight on the left leg.
2. Bend the right leg, lifting the foot from the floor and cross your right thigh over your left.
3. Take the right foot around the left calf.

4. Bring the arms out in front.
5. Cross the left arm over the right and bring the palms to touch.
6. Lift the elbows while keeping the shoulders sliding down the back.
7. Hold 5-10 breaths.
8. Repeat on the other side.

Strengthens legs, improves balance and strengthens the shoulder.

MODERN ASPECT

ANATOMY OF THE KNEE JOINT

-Synovial joint

-Modified hinge joint

-Compound joint

Articulation :

It is a compound joint that includes two condylar joints between the femur and the tibia and a sellar joint between the patella and the femur.

The lateral and medial articular surface of the femur and tibia are asymmetrical. The distal surface of the medial condyle of the femur is narrow and more curved than that of the lateral condyle.

The lateral tibial articular surface is almost circular the medial is oval with a longer anteroposterior and these differences are reflected in the shape of the menisci. The articular surface of the patella is divided by vertical ridge into a large lateral and a small medial surface, the latter is further subdivided by a vertical ridge into two smaller areas.

LIGAMENTS:

1. FIBROUS CAPSULE

The fibrous capsule is very thin and is deficient anteriorly, where it is replaced by the quadriceps femoris, the patella and the ligamentum patellae. The capsular ligament is weak. it is strengthened anteriorly by the medial and lateral patellar retinacula which are extensions from the vastus medialis and lateralis. Laterally by the iliotibial tract, medially by

expansions from the tendons of the sartorius and semimembranosus and posteriorly by the oblique popliteal ligament

2. LIGAMENTUM PATELLAE

It is attached above to the margin and rough posterior surface of the apex of patella and below to the smooth upper part of the tibial tuberosity.

3. **TIBIAL COLLATERAL LIGAMENT**

It is a flat, triangular band attached above to the medial femoral epicondyle, just distal to the adductor tubercle and attached below to the upper part of the medial surface of the tibia.

4. **FIBULAR COLLATERAL LIGAMENT:**

The ligament is strong and cord- like. It is attached proximally to the lateral epicondyle below the attachment of the lateral head of gastrocnemius and above that of the tendon of popliteus. Its distal attachment is to head of the fibula overlapped by the tendon of biceps femoris.

5. OBLIQUE POPLITEAL LIGAMENT:

It is an expansion from the tendon of semimembranosus that blends with the capsule at the back of the joint and ascends laterally to the intercondylar fossa and lateral femoral condyle.

6. ARCUATE POPLITEAL LIGAMENT:

It is a Y shaped posterior expansion from the short lateral ligament. It extends backwards from the head of the fibula, arches over the tendon of the popliteus and is attached to the posterior border of the intercondylar area of the tibia.

7-8 CRUCIATE LIGAMENTS:

Anterior and posterior cruciate ligaments connecting tibia to femur. These are very thick and strong fibrous bands which act as direct bonds of union between tibia and femur to maintain anteroposterior stability of knee joint.

9.10 MENISCI:

a) Medical menisci:-

Semicircle and is broader posteriorly. It is firmly attached to the capsule and tibial collateral ligament.

b) Lateral menisci:

It is about four-fifths of circle and is of uniform width. Its anterior horn is attached in front of the intercondylar eminence of the tibia. The posterior horn is attached behind the intercondylar eminence, in front of the posterior horn of medial meniscus.

11. TRANSVERSE LIGAMENT:

It connects the anterior ends of the medial and lateral menisci.

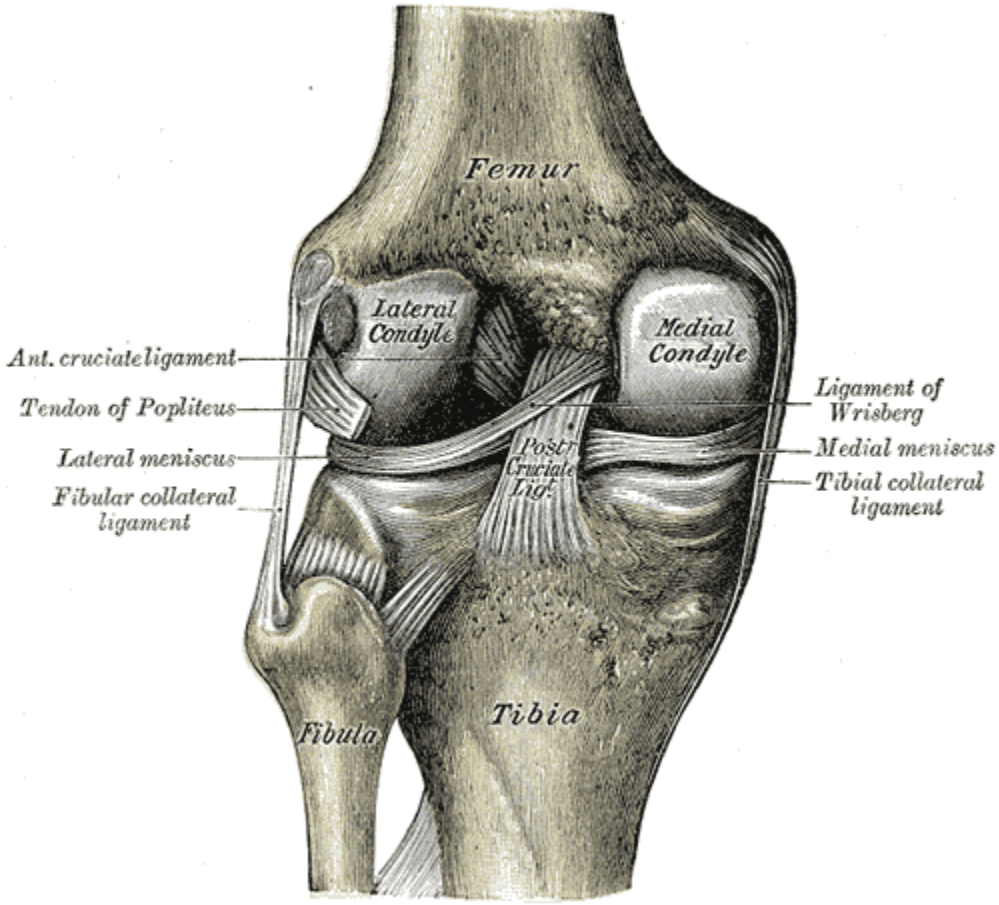
SYNOVIAL MEMBRANE:

It is the most extensive in the body but the amount of synovial fluid in a normal joint is only 0.5ml. a mere capillary film. The synovial membrane of the knee joint lines the capsule, except posteriorly where it is reflected forwards by the cruciate ligaments, forming a common covering for both ligaments.

Attachments :

In front, it is absent from the patella. Above the patella, it is prolonged upwards for 5 cm or more as the suprapatellar bursa. Below the

patella, it covers the deep surface of the infrapatellar pad of fat, which separates it from the ligamentum patellae. A median fold, the infrapatellar synovial fold, extends backwards from the pad of fat to the intracondylar fossa of the femur. An alar fold diverges on each side from the medial fold to reach the lateral edges of the patella.



Bursae around the knee:

Anterior:

- Subcutaneous prepatellar bursa
- Subcutaneous infrapatellar bursa
- Deep infrapatellar bursa
- Suprapatellar bursa.

Lateral:

- A bursa deep to the lateral head of the gastrocnemius
- A bursa between the FCL and the biceps femoris
- A burse between the FCL and popliteus tendon.
- A bursa between the popliteus tendon and lateral condyle of the tibia

Medial:

1.Bursa deep to the medial head of the gastrocnemius

2. Anserine bursa

3. Bursa deep to TCL

4. Bursa deep to the semimembranosus.

5. Occassionally a bursa is present between the tendon of the semimembranosus and the semitendinosus

BLOOD SUPPLY:

- Five genicular branches of the politieal artery.
- Descending genicular branch of the femoral artery
- Descending branch of the lateral circumflex femoral artery
- Two recurrent branches of the anterior tibial artery
- Circumflex fibular branch of the posterior tibial artery.

NERVE SUPPLY:

Femoral nerve

Sciatic nerve

Obturator nerve

ARTHRITIS OF KNEE

Osteoarthritis(Osteo arthritis) is the most common form of knee arthritis. Osteo arthritis is usually a slowly progressive degenerative disease in which the joint cartilage gradually wears away. It most often affects middle-aged older people.

EPIDEMIOLOGY AND RISK FACTORS

Osteo arthritis is the most common joint disease of humans. Among the elderly, knee Osteo arthritis is the leading cause of chronic disability in developed countries. Radiographic evidence of knee Osteo arthritis and especially symptomatic knee Osteo arthritis, is more common in women than in men.

Age is the most powerful risk factor for Osteo arthritis. In a radiographic survey of women less than 45 years old, only 2% had Osteo arthritis; between the ages of 45 to 64 years, however the prevalence was 30% and for those older than 65 years it was 68%. In males, the figures were similar but somewhat lower in the older age groups.

Major trauma and repetitive joint use are also important risk factors for Osteo arthritis. Anterior cruciate ligament insufficiency or meniscus damage and meniscetomy may lead to knee Osteo arthritis. Although damage to the articular cartilage may occur at the time of injury or subsequently, with use of the affected joint, even normal cartilage will degenerate if the joint is unstable.

TYPES OF Osteo arthritis

Osteoarthritis can be broadly grouped as follows:

*Primary osteoarthritis when there is no previous pathology.

*Secondary osteoarthritis when it is secondary to some previous pathology.

Primary Osteoarthritis

Primary osteoarthritis is due to the wear and tear changes occurring in old age in which weight bearing joints like the hips and knees are more commonly affected. It is uncommon in non-weight bearing joints like the shoulder and elbow.Obesity is a predisposing factor.

Osteoarthritis is a progressive process affecting the articular cartilage of aging joints. It is characterised by focal degeneration of the articular cartilage. As the articular cartilage is cyclically loaded during movements of joints, it undergoes fatigue failure leading to fragmentation of the surface and fibrillation. In the later stage, the cartilage gets completely eroded, exposing the sclerosed(eburnated) bone and subchondral cysts are also formed.

The bone undergoes reactive hypertrophy forming peripheral osteophytes. The synovial membrane undergoes hyperemia and reactive inflammatory thickening. As there is no destructive pathology, the joint dose not get ankylosed.

Secondary Osteoarthritis

Secondary osteoarthritis is due to an abnormal wear and tear in a joint, caused by mechanical incongruity of the articular surfaces. This incongruity may be the result of a preceding fracture involving the articular surface or partial destruction or deformity due to a previous disease.

Aetiology

The causes of osteoarthritis include the following:

- Endocrine: People with diabetes may prone to osteoarthritis. Other endocrine problems also may promote development, including acromegaly, hypothyroidism, hyperparathyroidism and obesity.
- Post traumatic: Traumatic causes can be further divided into macrotrauma. An example of macrotrauma is an injury to the joint such as bone break, causing the bones to line up improperly, lose stability or damage cartilage. Microtrauma may occur chronically. An example of this would be repetitive movements or the overuse noted in several occupations.
- Inflammatory joint diseases: This category would include infected joints, chronic gout and rheumatoid disease.
- Metabolic: Diseases causing errors of metabolism may cause osteoarthritis. Examples include Paget's disease and Wilson disease.
- Congenital or Developmental: Abnormal anatomy such as unequal leg length may be a cause of osteoarthritis.
- Genetic: A genetic defect may promote breakdown of the protective architecture of cartilage. Examples include collagen disturbances such as Ehlers-Danlos syndrome.
- Neuropathic: Diseases such as diabetes can cause nerve problems.
- Other: Nutritional problems may cause osteoarthritis. Other diseases such as hemophilia and sickle cell are further examples.

PATHOGENESIS

The main load on articular cartilage- the major target tissue Osteo arthritis is produced by contraction of the muscles that stabilize or move the joint.

Although cartilage is an excellent shock absorber in terms of its bulk properties, at most sites it is only 1 to 2 mm thick- too thin to serve as the sole shock-absorbing structure in the joint.Additional protective mechanisms are provided by subchondral bone and periarticular muscles.

Articular cartilage serves two essential functions within the joint, both of which are mechanical. First, it provides a remarkably smooth bearing surface, so that the bones glide effortlessly over each other with joint movement. With synovial fluid as lubricant, the coefficient of friction for cartilage rubbed against cartilage even under physiologic loading, is 15 times lower than that of two ice cubes passed across each other. Second, articular cartilage prevents the concentration of stresses, so the bones do not shatter when the joint is loaded.

Osteo arthritis develops in either of two settings:

- The biomaterial properties of the articular cartilage and subchondral bone are normal, but excessive loading of the joint causes the tissues to fail, or
- The applied load is reasonable, but the material properties of the cartilage or bone are inferior.

Although articular cartilage is highly resistant to wear under conditions of repeated oscillation,repetitive impact loading soon leads to joint failure. This fact accounts for the high prevalence of Osteo arthritis at specific sites related to vocational or avocational overloading. In general, the earliest changes occur at the sites in the joint that are subject to the greatest compressive loads.

Clinical conditions that reduce the ability of the cartilage or subchondral bone to deform are associated with development of Osteo arthritis. In ochronsis, for example, accumulation of homogenitisic acid polymers leads to stiffening of the cartilage; in osteopetrosis, stiffness of the subchondral trabeculae. In both conditions, severe generalized Osteo arthritis is usually apparent by the age of 40.If the subchondral bone is stiffened experimentally, repetitive impact loading soon leads to breakdown of the overlying cartilage. Conversely, osteoporosis, in which bone is abnormally soft, may protect against Osteo arthritis.

The Extracellular Matrix of Normal Articular cartilage

Articular cartilage is composed of two major macromolecular species: proteoglycans(PGs), which are responsible for the compressive stiffness of the tissue and its ability to withstand load and collagen, which provides tensile strength and resistance to shear. Although lysosomal proteases(cathepsins) have been domonstrated within the cells and matrix of normal articular cartilage, their low pH optimum makes it likely that the proteoglycanase activity of these enzymes will be confined to intracellular sites or the immediate pericellular area. However, cartilage also contains a family of matrix metalloproteinases (MMPs), including stromelysin, collagenase and gelatinase, which can degrade all the components of the extracelluler matrix at neutral pH. Each is secreted by the chondrocyte as a latent proenzyme that must be activated by proteolytic cleavage of its N-terminal sequence. The level of MMP activity in the cartilage at any given time represents the balance between activation of the proenzyme and inhibition of the active enzyme by tissue inhibitors. Much of the total tissue pool of aggrecan, the major PG in articular cartilage, is degraded by a proteinase, which cleaves the protein core of a molecule at a site distinct from the cleavage site of the MMP . The enzyme responsible for this cleavage is referred to as “aggrecanase” but has not been clearly identified.

The turnover of normal cartilage is effected through a degradative cascade, for which many investigators consider the drivingforce appears to be interleukin(IL) 1, a cytokine produced by mononuclear cells (including synovial lining cells) and synthesized by chondrocytes. IL-1 stimulates the synthesis and secretion of the latent MMPs and of tissue plasminogen activator. Plasminogen, the substrate for the latter enzyme, may be synthesized by the chondrocyte or may enter the cartilage from the synovial fluid. Both plasminogen and stromelysin may play a role in activation of the latent MMPs. In addition to its catabolic effect on cartilage, IL-1, at concentrations even lower than those needed to stimulate cartilage degradation, suppresses PG synthesis by the chondrocyte, inhibiting matrix repair.

The balance of the system lies with at least two inhibitors, tissue inhibitor of metalloproteinase(TIMP) and plasminogen activator inhibitor-1 (PAI-1), which are synthesized by the chondrocyte and limit the degradative activity of MMPs and plasminogen activator, respectively. If TIMP or PAI-1 is destroyed or is present in concentrations that are insufficient relative to those of active enzymes, stromelysin and plasmin are free to act on matrix substrates. Stromelysin can degrade the protein core of the PG and activate latent collagense. Conversion of latent stromelysin to an active, highly destructive protease by plasmin provides a second mechanism for matrix degradation.

Polypeptide mediators, e.g., insulin-like growth factor-1(IGF-1) and transforming growth factor (TGF-β), stimulate biosynthesis of PGs.They regualate matrix metabolism in normal cartilage and may play a role in matrix repair in Osteo arthritis. Notably, these growth - modulate catabolic as well as anabolic pathways of chondrocyte metabolism; by down-regulating chondrocyte receptors for IL-1, they may decrease PG degradation.

In addition to its responsiveness to cytokines and a variety of biologic mediators, chondrocyte metabolism in normal cartilage can be modulated directly by mechanical loading. Whereas static loading and prolonged cyclic loading inhibit synthesis of PGs and protein, loads of relatively brief duration may stimulate matrix biosynthesis.

Pathophysioloy of Cartilage Changes in Osteo arthritis

The primary changes in Osteo arthritis begin in the cartilage. A change in the arrangement and size of the collagen fibers is apparent. Biochemical data are consistent with presense of a defect in the collagen network of the matrix, perhaps due to disruption of the “glue” that binds adjacent fibers.This is among the earliest matrix changes observed and appears to be irreversible.

Although“wear” may be a factor in the loss of cartilage, strong evidence supports the concept that lysosomal enzymes and MMPs account for much of the loss of cartilage matrix in Osteo arthritis. Whether their synthesis and secretion or stimulated by IL-1 or by other factors(e.g., mechanical stimuli), MMPs, plasmin, and cathepsins all appear to be involved in the break down of articular cartilage in Osteo arthritis. TIMP and PAI-1 may work to stabilize the system, at least temporarily, while growth factors, such as IGF-1, TGF-β, and basic fibroblast growth factor, are implicated in repair processes they may heal the lesion or, at least, stabilize the process. A stoichiometric imbalance exists between the levels of active enzyme and the level of TIMP, which may be only modestly increased.

The possible role of nitric oxide (NO) in articular cartilage damage in Osteo arthritis, since NO has been shown to stimulate synthesis of MMPs by chrondrocytes. Chondrocytes are a major source of NO, synthesis of which is stimulated by IL-1 and tumor necrosis factor and by shear stresses on the tissue.

In an experimental model of Osteo arthritis, treatment with a selective inhibitor of inducible NO synthase reduced the severity of cartilage damage.

The chondrocytes in Osteo arthritis cartilage undergo active cell divison and very active metabolically, producing increased quantities of DNA,RNA collagen, PG and noncollagenous proteins. Prior to cartilage loss and PG depletion, this marked biosynthetic activity may lead to an increase in PG concentration, which may associated with thickening of the cartilage and stage of homeostasis referred to as “compensated” Osteo arthritis. These mechanisms may maintain the joint in a reasonably functional state for years. The repair tissue, however, often does not hold up as well under mechanical stresses as normal hyaline cartilge end eventually, at least in some cases, the rate of PG synthesis falls off and “end-stage” Osteo arthritis develops, with full-thickness loss of cartilage.

CHANGES OF NORMAL CARTILAGE TO AGING CARTILAGE:

In normal articular cartilage aggrecan contains numerous GAG which is capable of retaining water.

Several structural and biochemical changes involving the non collagenous component of the matrix occur during aging. These changes alter biochemical properties of the cartilage that are essential for the distribution of forces in the weight bearing zone.

Glycosaminoglycans are modified qualitatively; they become shorters as the cartilage ages. The concentration of kertain sulphate increase during aging.

These quantitative and qualitative changes in proteologlycans reduce the capacity of the molecules to retain water. Thus aging cartilage contains less water, which alters the biochemical properties of the cartilage. Fissures that develop aging are due to stress fractures of the collgen network.

CLINICAL FEATURES

The joint pain of Osteo arthritis is often described as a deep ache and is localized to the involved joint. Typically, the pain of Osteo arthritis is aggrevated by joint use and relieved by rest, but as the disease progresses, it may become persistent. Nocturnal pain , interfering with sleep, is seen particularly in advanced Osteo arthritis of the hip and may be enervating. Stiffness of the involved joint upon arising in the morning or after a period of inactivity (e.g.,a night's sleep ,an automobile ride) may be prominent but usually lasts less than 20 min. Systemic manifestations are not a feature of primary Osteo arthritis.

Because articular cartilage is aneural, the joint pain in Osteo arthritis must arise from other structures . In some cases it may be due to stretching of nerve endings in the periosteum covering osteophytes; in others, to microfractures in subchondral bone or from medullary hypertension caused by distortion of blood flow by thickened subchrondral trabecule. Joint instability, leading to stretching of the joint capsule and muscle spasm may also be sources of pain.

In some patients with Osteo arthritis, joint pain may be due to synovitis. In advanced Osteo arthritis, histologic evidence of synovial inflammation may be as marked as that in the synovium of a patient with rhumatoid arthritis. Synovitis in Osteo arthritis may be due to phagocytosis of shards of cartilage and bone from the abraded joint surface (wear particles), to release from the cartilage of soluble matrix macromolecules, or to crystals of calcium pyrophosphate or hydroxyapatite. In other cases, immune complexes, containing antigens derived from cartilage matrix, may be sequestered in collagenous tissue of the joint, leading to low grade chronic synovitis. In contrast, in the earlier stages of Osteo arthritis, even in the patient with chronic joint pain, synovial

inflammation may be absent, suggesting that the joint pain is due to one of the other factors mentioned above.

Physical examination of the Osteo arthritis joint may reveal localized tenderness and bony or soft tissue swelling. Bony crepitus (the sensation of bone rubbing against bone, evoked by joint movement) is characteristic. Synovial effusions, if present, are usually not large. Palpation may reveal some warmth over the joint. Periarticular muscle atrophy may be due to disuse or reflex inhibition of muscle contraction. In the advanced stages of Osteo arthritis, there may be gross deformity, bony hypertrophy, subluxation, and marked loss of joint motion. In many patients the disease stablizes; in some, regression of joint pain and even of radiographic changes occurs.

Although the diagnosis of Osteo arthritis is often straightforward because of the high prevalence of radiographic changes of Osteo arthritis in asymptomatic individuals, it is important to ensure that joint pain in a patient with radiographic evidence of Osteo arthritis is not due to some other cause, such as soft tissue rheumatism (e.g., anserine bursitis at the knee, trochanteric bursitis at the hip), radiculopathy, referral of pain from another joint (e.g., 25% of patients with hip disease have pain referred to the knee), entrapment neuropathy, vascular disease(claudication), or some other type of arthritis (e.g., crystal-induced synovitis, septic arthritis). It is usually not difficult to differentiate Osteo arthritis from a systemic rheumatic diseases, joint involvement is rhumatroid arthritis, because, in the latter diseases, joint involvement is usually symmetric and polyarticular, with arthritis in wrists and metacarpophalangeal joints (which are generally not involved in Osteo arthritis),and there are also constitutional features such as prolonged morning stiffness, fatigue, weight loss or fever.

Causes of joint pain in patients with Osteo arthritis

Source	mechanism
Synovium	inflammation
Subchondral bone	medullary hypertension, microfractures
Osteophyte	Stretching of periosteal nerve endings
Ligaments	stretch
Capsule	Inflammation, distention
Muscle	spasm

Diagnosis

Imaging

- X-rays:

Approximately one-third of people with osteoarthritis on X-rays have symptoms such as pain or swelling. X-rays can show narrowing of the space between the joint (articular surface), osteophytes, cyst formation, and hardening of the underlying bone. Scoring systems have been used to assess the extent of the bony changes on X-rays. Separate scoring systems for the different joints have been studied and found to be predictive of disease status. An important finding from these studies was that the presence of osteoarthritis of the hands was a predictive sign of deterioration of the knee joint.

- MRI :

This study is complex, noninvasive imaging technique that unlike X-rays. X-rays provide information mainly bones. However, MRI is capable of visualizing all structures within the joint.

- CT scan :

This study may be used to image a joint. CT scanning mainly provides information on the bony structures of the joint but in greater detail than plain X-rays.

- Joint Fluid Analysis :

Fluid may be extracted from the knee with a needle and syringe when the diagnosis is uncertain or if an infection is suspected.

Blood Tests :

No currently accepted blood test marker for this disease exists. Blood tests may be drawn in cases in which infection is suspected.

Osteoarthritis Differential Diagnosis

- Rhumatoid arthritis
- Spondyloarthropathy
- Chondrocalcinosis
- Joint trauma
- Metabolic Bone Disorders
- Hypermobility syndromes
- Neuropathic diseases

The following should also be considered in the differential diagnosis:

- Crystal deposition disease
- Pseudogout
- Inflammatory arthritis
- Seronegative spondyloarthropathies
- Infected joint
- Underlying mechanical pain
- Reactive arthritis

Differential Diagnoses :

- Abdominal Aortic Aneurysm Imaging
- Ankylosing Spondylitis
- Avascular Necrosis
- Calcium Pyrophosphate Deposition Disease
- Imaging in Neuropathic Arthropathy(Charcot joint)
- Lyme Disease
- Patellofemoral Arthritis
- Patellofemoral Syndrome
- Prepatellar Bursitis
- Psoriatic Arthritis
- Rhinosporidiosis

Osteoarthritis Treatment:

Self-Care at Home

Lifestyle changes may delay or limit osteoarthritis symptoms. These are common home remedies:

Weight loss: One study suggested that, for women, weight loss may reduce the risk for osteoarthritis in the knee.

Exercise: Regular exercise may help to strengthen the muscles and potentially stimulate cartilage growth. Avoid high-impact sports. The following types of exercise are recommended:

Range of motion,

Strengthening

Aerobic

Diet: While there is no specific osteoarthritis diet, supplements of antioxidant vitamins C and E may provide some protection. Vitamin D and calcium are recommended daily. Dose of calcium is 1000-1200 mg per day. The current guideline for vitamin D is 400 IU per day.

Heat: Hot soaks and warm wax(paraffin)application may relieve pain.

Orthoses: These assistive devices, such as or neck braces and knee braces, are used to improve function of movable parts of the body or to support, align, prevent, or correct deformities. Splints or braces help with joint alignment and weight redistribution. Other examples include walkers, crutches or canes and orthopedic footwear.

Over-The-Counter(OTC)medications

Acetaminophen(tylenol) is the first drug recommended for osteoarthritis.

Nonsteroidal anti-inflammatory drugs (NSAIDs) are commonly used for arthritis pain.These include aspirin, ibuprofen(Motrin or Advil), naproxen(Aleve), and ketoprofen (Orudis).

Newer OTC preparations include chondrotin and glucosamine sulfate, which are natural substances found in the joint fluid. Chondroitin is thought to promote an increase in the making of the building blocks of cartilage(collagen and proteoglycans) as well as having an anti-inflammatory effect. Glucosamine may also stimulate production of the building blocks of cartilage as well as being an anti-inflammatry agent. Glucosamine was found to increase blood sugar in animal studies, so people with diabetes should consult their doctor first.

Arthritis self-help course: The Arthritis Foundation offers an educational program on the causes and treatment of arthritis. Exercise, nutrition, relaxation and pain management programs are covered as well as ways to communicate with your doctor. Completion of the program reduced pain by 20% and doctor visits by 40%.

Medical Treatment: The overall goal of treatment is early elimination of risk factors, early diagnosis and surveillance of the disease and appropriate treatment of pain. It’s also important to help people regain their mobility. Treatment These goals may be reached through a logical approach to care including the overlapping of treatment that does not involve medications and treatment with medication and possibly surgical management.

Treatment that does not involve medications includes education, physical and occupational therapy, weight reduction, exercise and assistive devices(orthoses).

Surgical Treatment

Joint replacement surgery should be reserved for patient with advanced Osteo arthritis in whom aggressive medical management has failed. In such cases total joint arthroplasty may be remarkable effective in relieving pain and increasing mobility.

Osteotomy, which is surgically more conservative, can eliminate concentration of peak dynamic loading and may provided effective pain relief in patients with knee Osteo arthritis. It is of greatest benefit when the disease is only moderately advanced. Arthroscopic removal of loose cartilage fragments can prevent locking and relieve pain.

Chondroplasty has also had some popularity as treatment of Osteo arthritis, but well-controlled studies of its efficacy are lacking , the fibrocartilage that resurfaces the abraded bone is inferior to normal hyaline cartilage in its ability to withstand mechanical loads. In patients who had undergone tibial osteotomy for medial compartment knee Osteo arthritis,knee pain and function were not related to the extent of cartilage regeneration 2 years later.

Autologous chondrocyte transplantation and attempts at cartilage repair using mesenchymal stem cells and autologous osteochondral plugs are currently being used experimentally for repair of focal chondral defects, but have not proved to be effective in treatment of Osteo arthritis.

Management of Osteoarthirits

Simple changes around the home and daily activities cause dramatic improvement in the symptomatology of osteoarthritis. The following are some of the measures:

- Use of higher chair which require less effort to get in and get out should be considered
- Changes to be made in the bathroom :
    - Use of Western toilets and avoding the Indian type
    - To fit the bath aids to facilitate easy getting in getting out of a bath.
    - To fit railings next to the toilet and bath to facilitate ease of movement.
- Patients are advise to climb the stairs leading the good leg taking one stair at a time and to descend the stairs leading with the bad leg, again taking one stair at a time
- To reduce the force acting across the injured joint patients advised to use a walking stick which acts as a third limb. The stick should be held in the hand opposite to the affected hip or knee. Initially it should be used around the home. The top of the stick should come up to the wrist when the patient stands and the tip should be provided with a firm rubber to avoid slipping. A walking stick, by providing a third limb through which forces can be transmitted, enables the reduction of force can be transmitted, enables the reduction of force across the injured joint from peak values of 5 to 1.5 times the body weight.
- Footwear with hard soles and high heels should be avoided.
- Cars with raised platforms and seats which facilitate easy getting in and getting out should be used.
- If the patients are overweight, reduction in the weight helps to reduce the load on the joints.

EXERCISE FOR KNEE PAIN

Standing hamstring stretch

Quadriceps stretch

Side-lying leg lift

Straight leg raise

Step-up

Wall squat with a ball

- General:
    - Keep as upright as possible as this helps to put equal weight on both the legs.
    - Avoid sitting on a low or soft chair
    - Avoid curling up in bed.
    - To stretch the front of the thigh and hip, lie on the stomach at least once a day for five minutes to thirty minutes.
    - To use a walking stick when walking inside or outside the house
    - To avoid uneven and rough ground or surfaces while walking.
    - To wear comfortable footwears.
    - Avoid squatting on the ground.

Aims of the exercises in osteoarthritis knee

- To increase the range of movements
- To increase stability and shock absorption
- To prevent deformity
- To improve posture.
- To reduce pain and stiffness.

Rules of the exercises

- Build up the exercises gradually
- Avoid rough ground while exercising
- To take warm baths before starting the exercises.

- To perform the exercises 20 times each twice a day and later four times a day.

Types of Exercises in osteoarthritis of knee

Exercises lying on the Back

- Pelvic tilt: Tighten the thigh and relax
- Pelvic lift :Bend both the knees up, push on the feet and lift, old for a count of five and relax
- Leg stretch: Push one leg along the floor as through you are trying to make it longer than the other. Hold for a count of five and then repeat with the other leg.
- Alternate leg raising: Keeping the knees straight, lift alternate legs six inches from the ground

Exercises Lying on your side, with the Painful Hip up

- Side leg raising: Keep the top leg straight and lift it up as high as possible, hold for a count of five and relax.
- Knee and hip flexion: Bend hip and knee of the top leg forwards, and hold for a count of five. Then straighten the leg and stretch backwards as fas as it will go, hold for a count of five, then relax

Exercises in Sitting Posture

- Knees together, feet apart: Keep the knees together and move the feet apart, hold for a count of five then relax.
- Feet together, knees apart :Keep the ankles together and move the kness apart, then relax

Exercises in standing Posture

- Standing leg swing: Hold into a table or chair with one hand, swing one leg forward and backward. Try to get the backwards swing as wide as possible.
- Standing side leg swing: Hold on to a chair with both hands. Swing bad out as far as it will go and then in. The outward swing is the hardest part and the leg should be allowed to fall back under muscular control.

MATERIALS AND METHODS

To study on clinical evaluation of the disease “AZHL KEEL VAYU” with the drug KARUNGOZHI CHOORANAM (INTERNAL) and VIDAMUTTI THYLAM (EXTERNAL) was carried out in Postgraduate Sirappu Maruthuvam, Government Siddha Medical College, Palayamkottai. 20 patients of both male and female were selected for the studies and admitted in In patient ward for among 20 IP patients, 15 IP patients will be given massage and varmam treatment along with internal medicine and remaining 5 IP patients will be given massage fomentation without internal medicine.

Another 20 patients are treated with trial drug in the outpatient ward.

SELECTION OF PATIENTS:

INCLUSION CRITERIA:

- Age – 40 – 65 Years
- Sex - Both male and female
- Patients having symptoms of arthritis of both knee joints, swelling, stiffness, crepitation, restricted movements of both knee joints.
- Patients who are willing to undergo radiological investigation and give blood for laboratory investigation.
- Patient willing to sign the informed consent stating that he/she will consciously stick to the treatment during 48 days but can opt out of the trial of his / her own conscious discretion.

EXCLUSION CRITERIA:

- Cardiac disease
- Diabetes mellitus
- Hypertension
- Rheumatoid arthritis
- Pregnancy and lactation
- History of trauma
- Tuberculosis
- Use of narcotic drugs
- Neurological disorder
- Patients with any other serious illness.

STUDY OF CLINICAL DIAGNOSIS:

A case sheet is prepared on the basis of siddha and modern method to diagnose the disease and individual case sheet is maintained for each patient.

SIDDHA DIAGNOSTIC TOOLS:

- Poriyal arithal
- Pulanal arithal
- Vinathal
- Mukkutram
- Ezhu udal thathugal
- Envagai Thervu
- Thinaigal
- Paruva kalangal
- Thega nilai

LABORATORY INVESTIGATIONS:

Blood	**Urine**
TC	Albumin
DC	Sugar
ESR	Deposit
Hb	
Aso titre	

Radiological investigations:

X- ray of the knee joints (AP and Lat view) Improvement assessed by following assessments.

Administration of trial medicine

The trial drug was prepared carefully according to the siddha literature and given to 40 patients three times a day.

The Biochemical analysis was performed in Biochemical laboratory.

- The pharmacological analysis of trial drug for its analgesic, Acute anti-inflammatory, chronic Anti-inflammatory was performed in pharmacological laboratory.
- Observation of patients with signs and symptoms of the disease and their prognosis were noted.
- Patients also advised to given hot water fomentation, some exercise for better prognosis.

ASSESSMENT OF PROGNOSIS:

1. Clinical Assessement:

- Pain and swelling in both knee joints
- Stiffness in both knee joint
- Crepitation in joint line, medial condyle
- Tenderness in joint line, medial condyle of knee joint
- Warmth
- Periarticular atrophy
- Restricted movements of both the knee joints.

2. Radiological Assessment:

X-ray of the both knee (AP view and lateral view)

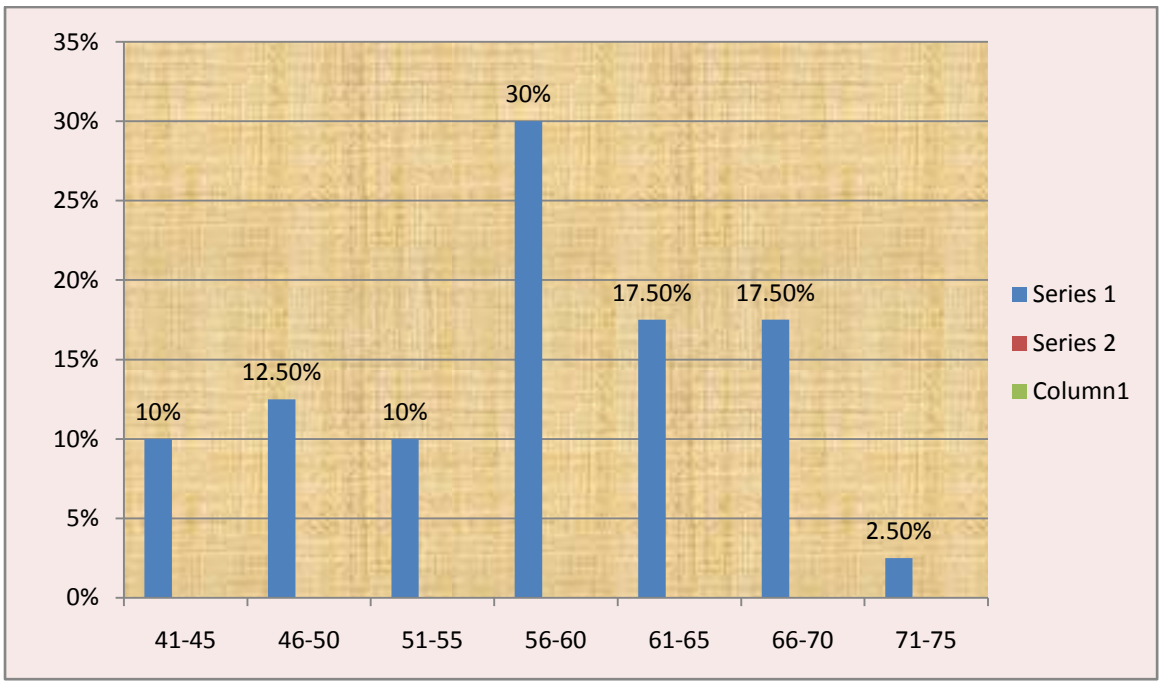
RESULTS AND OBSERVATION

Results of the study were observed with respect to the following criteria.

1. Sex Distribution
2. Age Distribution
3. Kaalam (Life span)
4. Paruva Kaalam (seasonal changes)
5. Thinai (5 land types)
6. Duration of illness
7. Occupational status
8. Diet
9. Onset of Disease
10. Socio economic status
11. Clinical features
12. Radiological findings
13. Disturbances in Vatham
14. Disturbance in Pitham
15. Disturbance in Kapham
16. Udal thathukkal
17. Envagai thervugal
18. Yakkai illakanam
19. Assessment of the Effect of therapy

1. Age Distribution:

S.No	Age	No.of Cases	Percentage
1.	41-45	4	10%
2.	46-50	5	12.5%
3.	51-55	4	10%
4.	56-60	12	30%
5.	61-65	7	17.5%
6.	66-70	7	17.5%
7.	71-75	1	2.5%



Most of the cases were above the age group of 55.

2. Sex Distribution:

S.No	Among **Sex**	**No.of Cases**	**Percentage**
1.	Male	22	55%
2.	Female	18	45%

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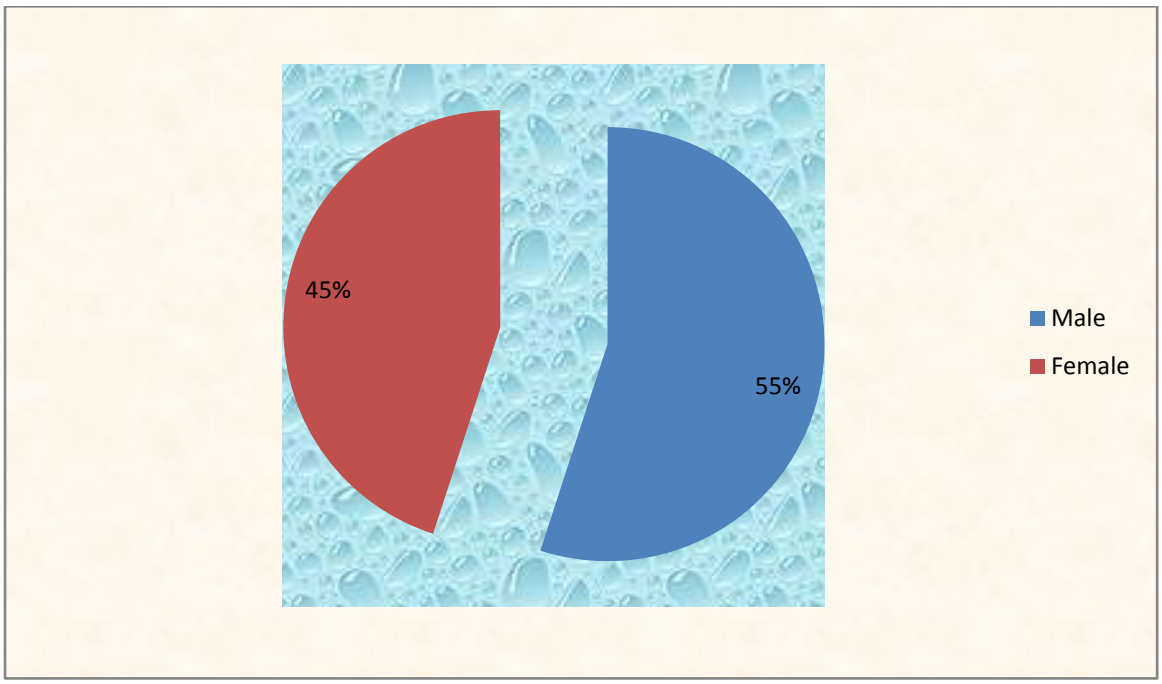
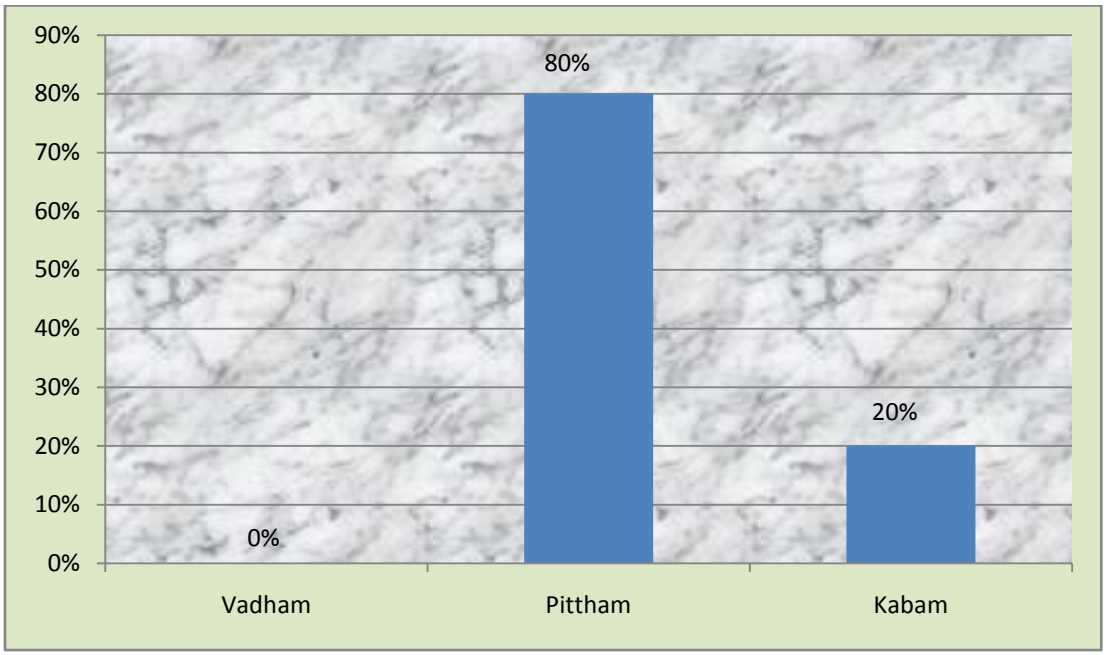


Among 40 cases 22(55%) were males and 18(45%) were females.

3. Kaalam:

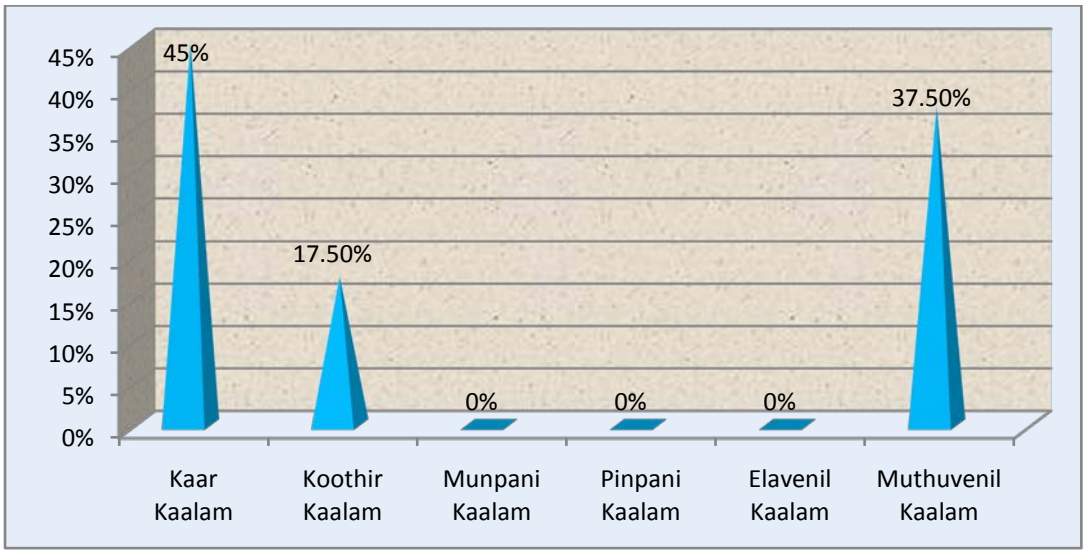
	Kaalam	No.of Cases	Percentage
1.	Vadham (upto 33 yrs to 66 yrs)	-	-
2.	Pittham (33 yrs to 66 yrs)	32	80%
3.	Kabam (above 66 yrs)	8	20%



Most of the cases 80% were in **Pittha Kaalam** and the rest were reported in Kaba Kaalam.

4. **Paruva Kaalam:**

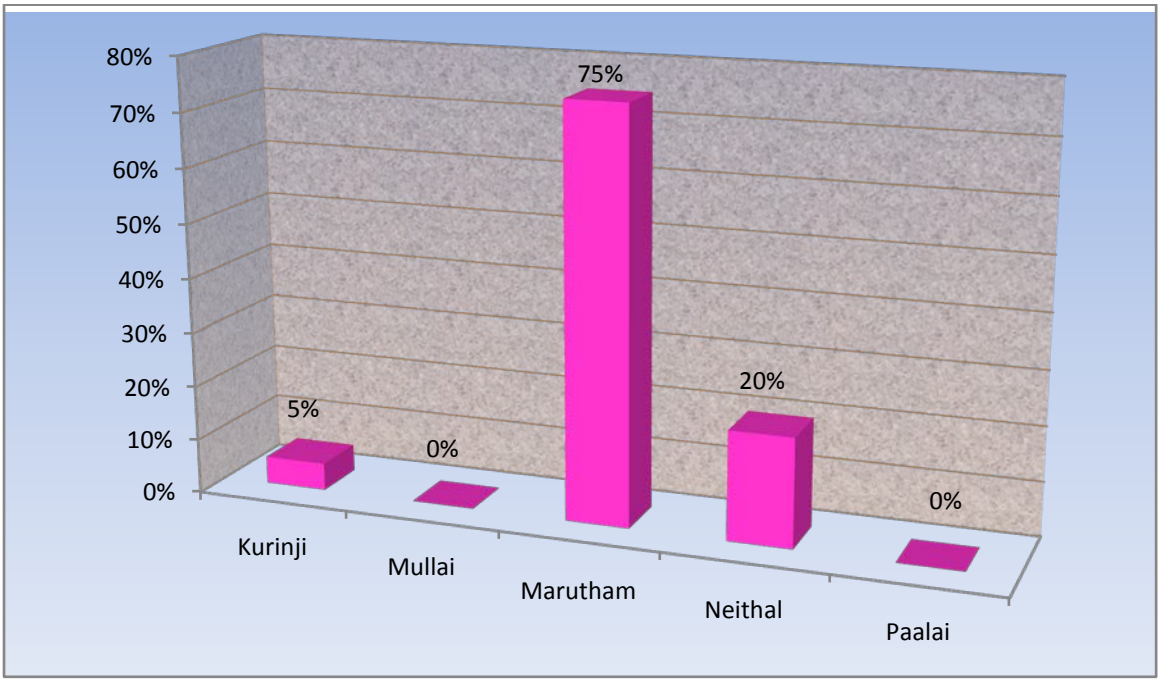
S.No	Paruvakaalam	No.of Cases	Percentage
1.	Kaar (Aaavani, Purattasi) (Aug 16 – Oct 15)	18	45 %
2.	Koothir (Iypasi, Karthigai) (Oct 16 – Dec 15)	7	17.5%
3.	Munpani (Margali, thai) (Dec 16 – Feb 15)	-	-
4.	Pinpani (Masi, Pankuni) (Feb 16 – April15)	-	-
5.	Elavenil (Chithirai, Vaikasi) (Apr 16 – June 15)	-	-
6.	Muthuvenil (Aani, Aadi) (June 16 – Aug 15)	15	37.5%



The maximum incidence of Azhal Keelvayu was during the Kaar Kaalam,Muthuvenil Kaalam and Koothir Kaalam.

5. Thinai (Place):

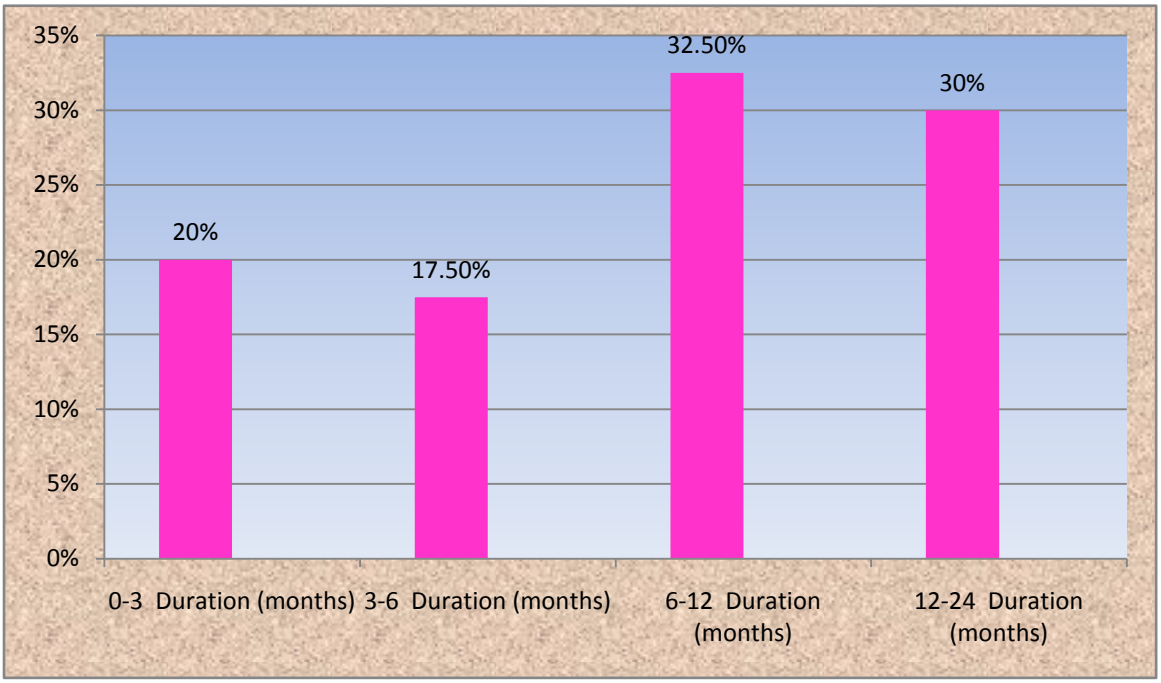
S.No	Thinai	No.of Cases	Percentage
1.	Kurinji (Hill area)	2	5%
2.	Mullai (Forest area)	-	-
3.	Marutham (Fertile area)	30	75%
4.	Neithal (Coastal area)	8	20%
5.	Paalai (Desert area)	-	-



Among the 40 cases, majority were from Marutha Nilam(75%).

6. Duration of Illness:

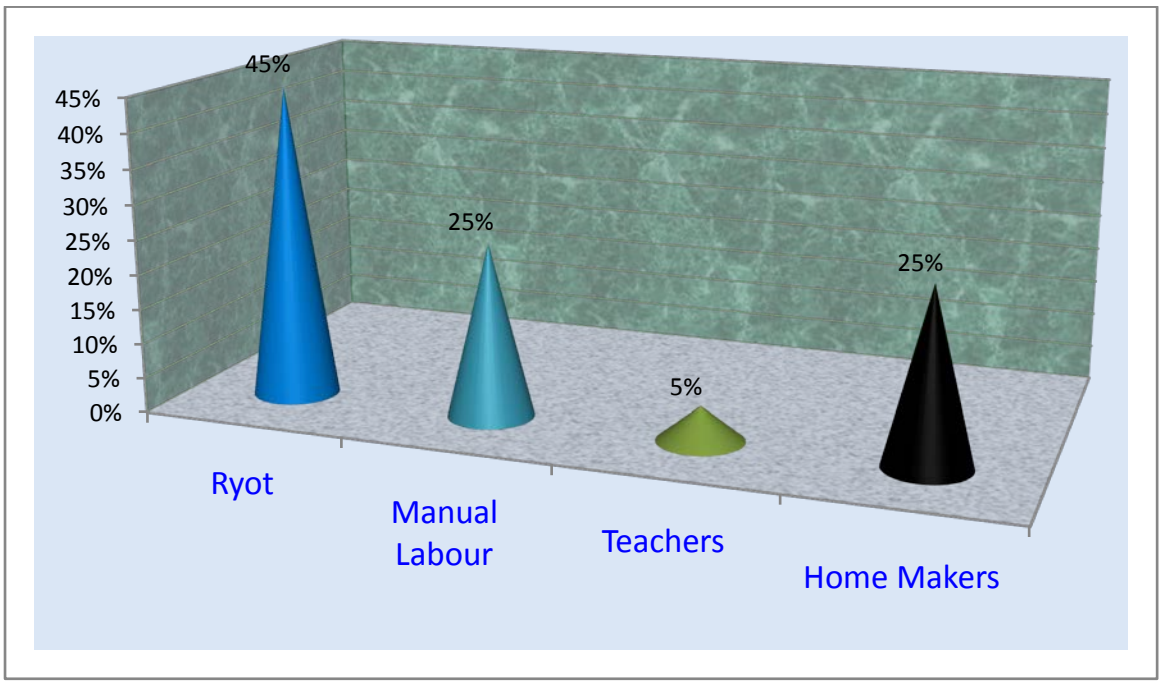
S.No	Duration (Months)	No.of.Cases	Percentage
1.	0-3	8	20%
2.	3-6	5	12.5%
3.	6-12	13	32.5%
4.	12-24	12	30%
5.	24-36	2	5%



Among the 60 cases, most of them had the duration of the illness - upto 1 year.

7. Occupational status:

S.No	Nature of Work	No.of Cases	Percentage
1.	Ryot	18	45%
2.	Manual labour	10	25%
3.	Home Makers	10	25%
4.	Teachers	2	5%

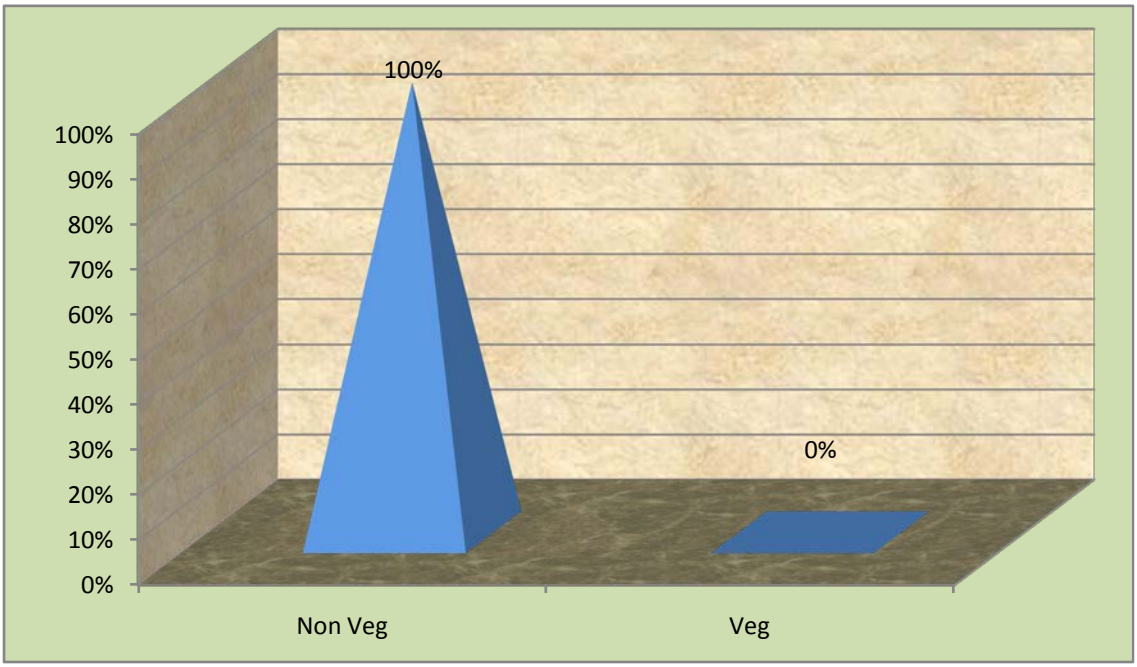


Occupational status shows Manual labours and Ryot were more affected.

8. Diet Reference:

S.No	Diet Habit	No. of Cases	Percentage
1.	Vegetarian	-	-
2.	Non vegetarian	40	100%

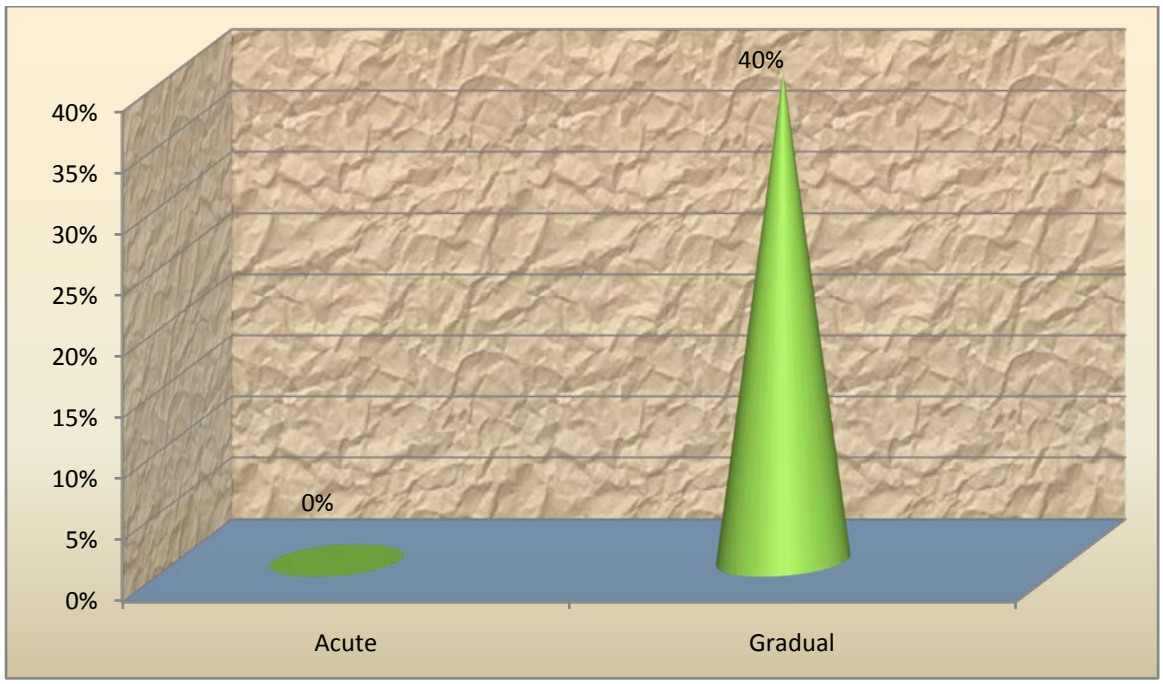
According to this study 100% of cases were reported as Nonvegetarian.



9. Mode of Onset:

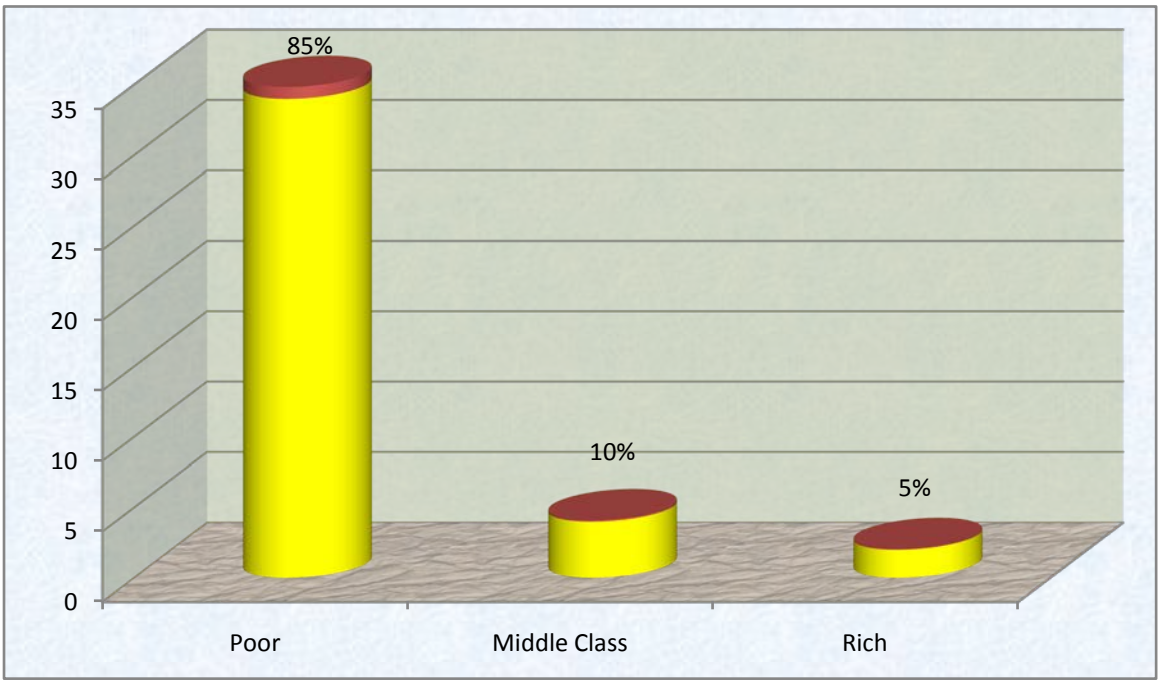
S.No	Mode of onset	No. of Cases	Percentage
1.	Acute	-	-
2.	Gradual	40	100%

According to this study 100% of cases were reported gradual onset of disease.



10.**The Socio – Economic Status:**

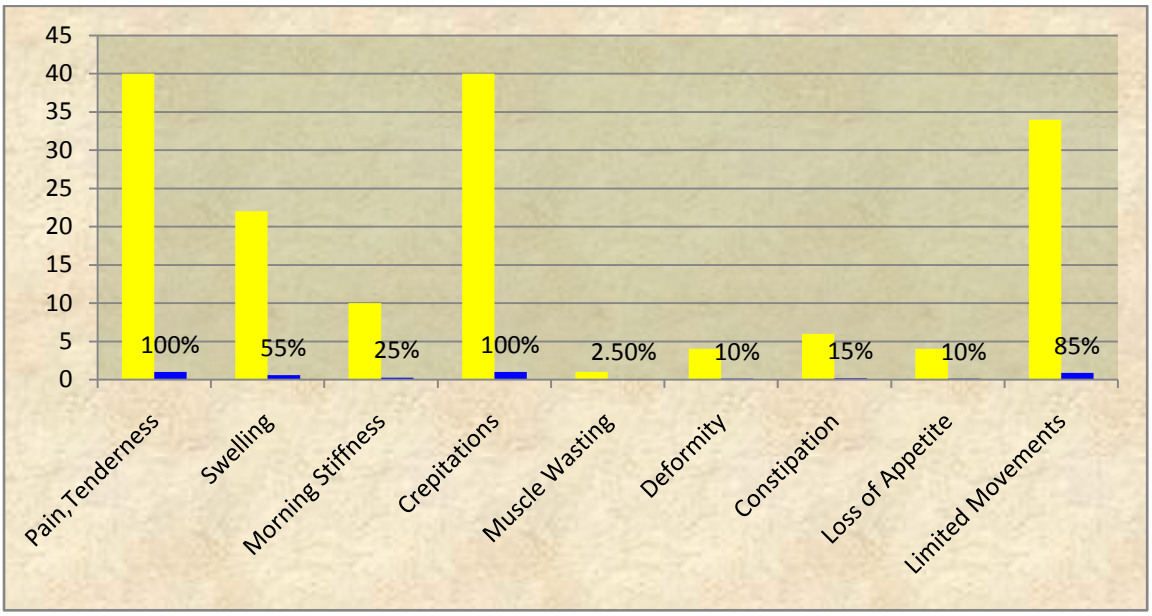
S.No	Socio – economic status	No. of Cases	Percentage
1.	Poor	34	85%
2.	Middle class	4	10%
3.	Rich	2	5%



According to this study 85% of the cases were poor socio – economic status, 10% cases were from middle class families and only 5 % from rich background.

11. Clinical Features of patients:

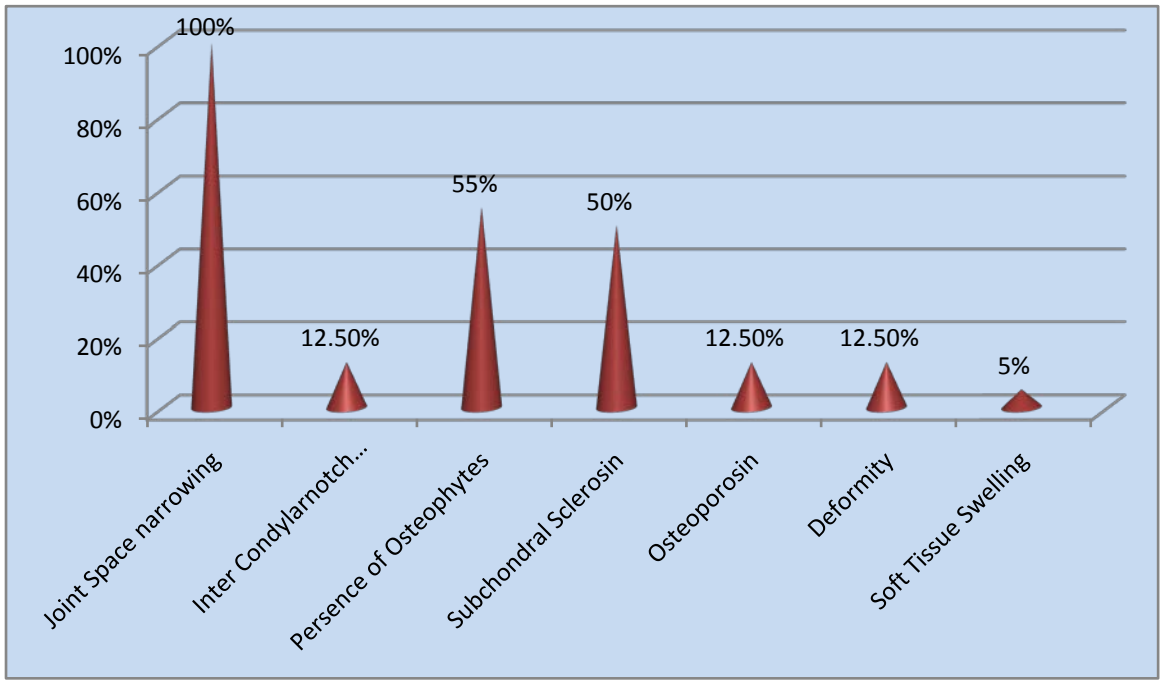
S.No	Signs and Symptoms	No.of Cases	Percentage
1.	Pain, tenderness	40	100%
2.	Swelling	22	55%
3.	Morning stiffness	5	12.5%
4.	Crepitations	40	100%
5.	Muscle Wasting	1	2.5%
6.	Deformity	4	10%
7.	Constipation	6	15%
8.	Loss of appetite	4	10%
9.	Limited Movements	34	85%



Among the twenty cases all of them (100%) had pain, tenderness and crepitations. 5 patients (12.5%) had morning stiffness. 15% of the patients had constipation and 85% had painful limited movements.

12. Radiological Findings in patients

S.No	Findings	No.of Cases	Percentage
1.	Joint space narrowing	40	100%
2.	Inter condylar notch prominence	5	12.5%
3.	Presence of Osteophytes	22	55%
4.	Subchondral Sclerosis	20	50%
5.	Osteoporosis	5	12.5%
6.	Deformity	5	12.5%
7.	Soft tissues swelling	2	5%

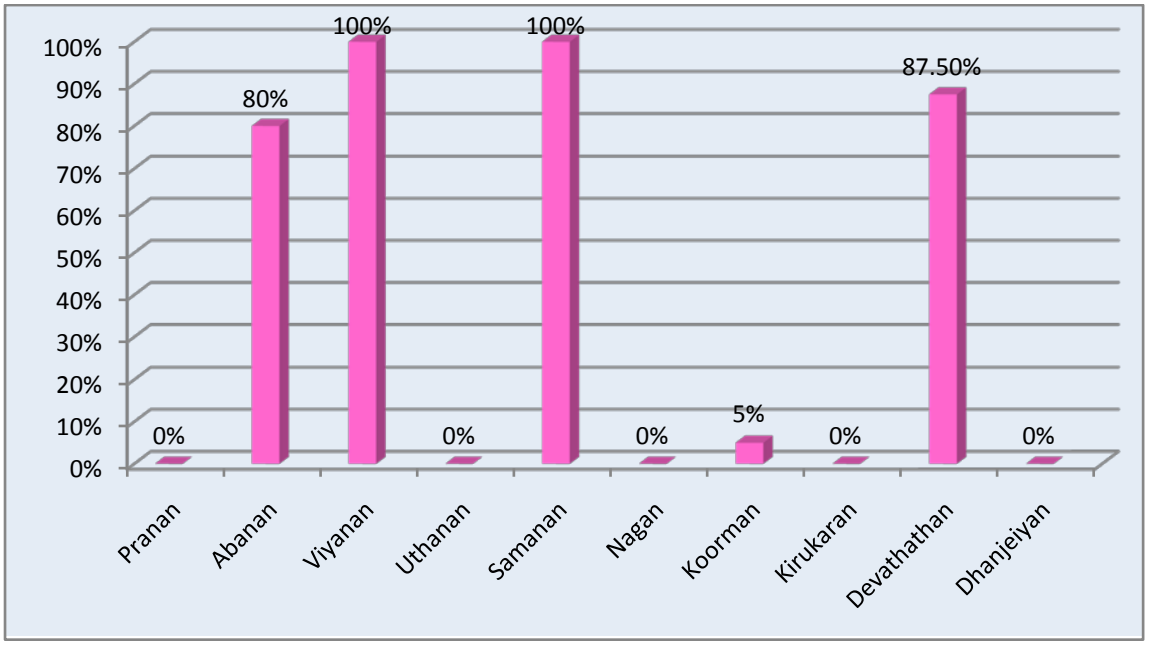


Joint Space narrowed in all cases (100%), Osteophytes present in 22 cases (55%).

13. Distubrances of Vatha:

Table showing the derangement of vatham:

S.No	Vatham	No.of Cases	Percentage
1.	Pranan	-	-
2.	Abanan	32	80%
3.	Viyanan	40	100%
4.	Uthanan	-	-
5.	Samanan	40	100%
6.	Naagan	-	-
7.	Koorman	2	5%
8.	Kirukaran	-	-
9.	Devethathan	35	87.5%
10.	Dhananjeyan	-	-



- Both Viyanan ans Samanan were affected in all the 40 cases (100%)
- Abanan was affected in 32 cases (80%).
- Devethathan was affected in 35cases (87.5%)
- Koorman was affected in 2 cases (5%)

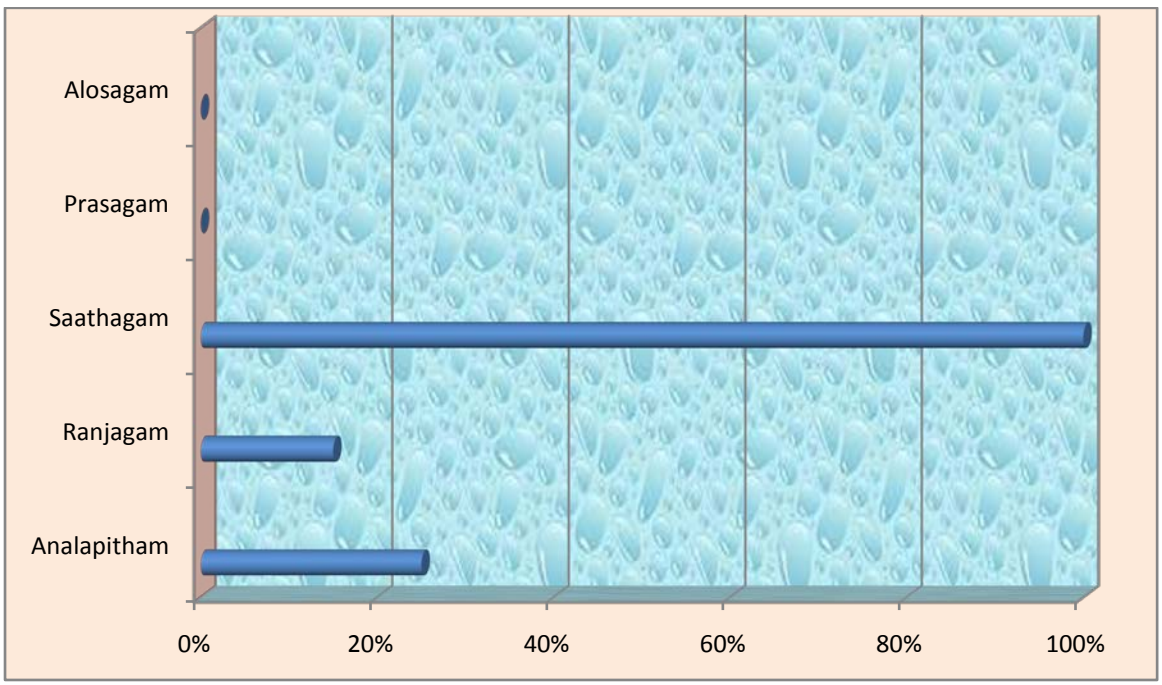
- **14.Distubrances in Pitham:**

S.No	Pitham	No.of Cases	Percentage
1.	Analapitham	10	25%
2.	Ranjagam	6	15%
3.	Saathagam	40	100 %
4.	Prasagam	-	-
5.	Alosagam	-	-

Saathaga Pitham was affected in all 40 cases (100%)

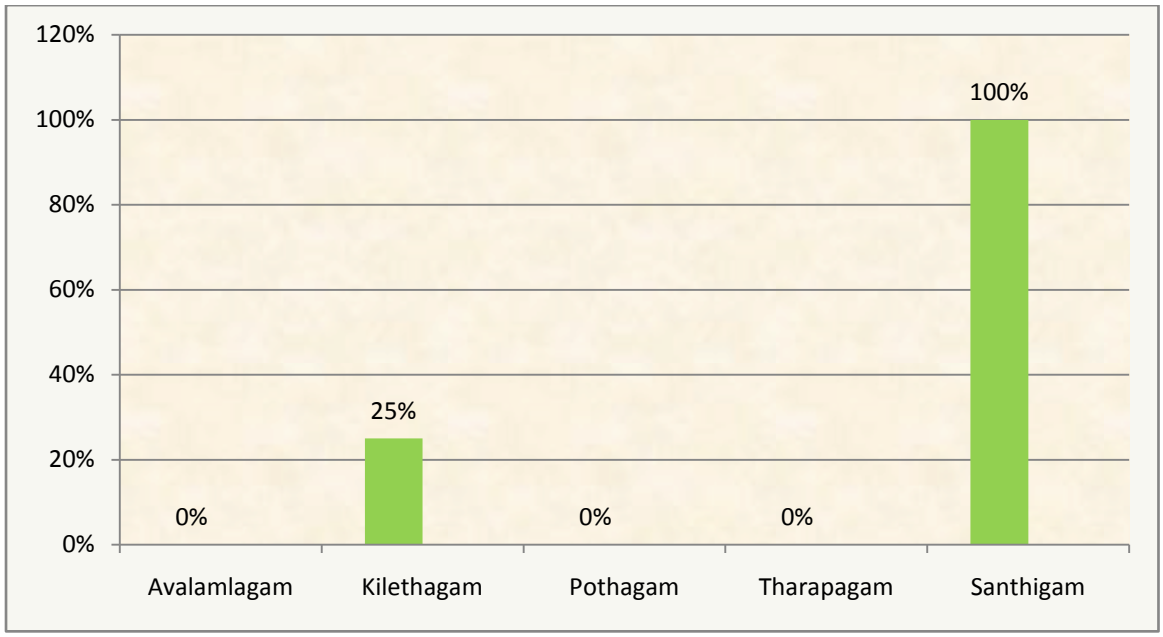
Analapitham was affected in 10 cases (25%)

Ranjagam was affected in 6 cases (15%)



15. Table showing the derangement of Kapham:

S.No	Kapham	No.of Cases	Percentage
1.	Avalambagam	-	-
2.	Kilethagam	10	25%
3.	Pothagam	-	-
4.	Tharpagam	-	-
5.	Santhigam	40	100%

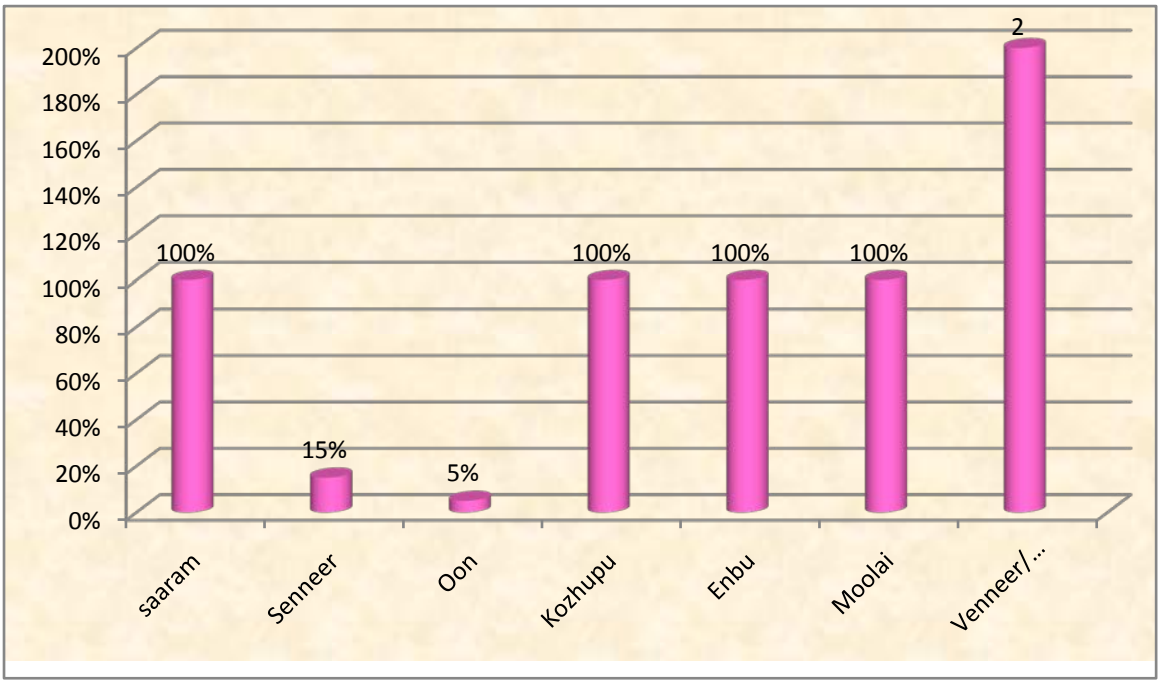


In all the 60 cases (100%) Santhigam was affected.Kilethagam was affected in 6 cases (10%)

16.Table Showing the condition of Udal Kattugal:

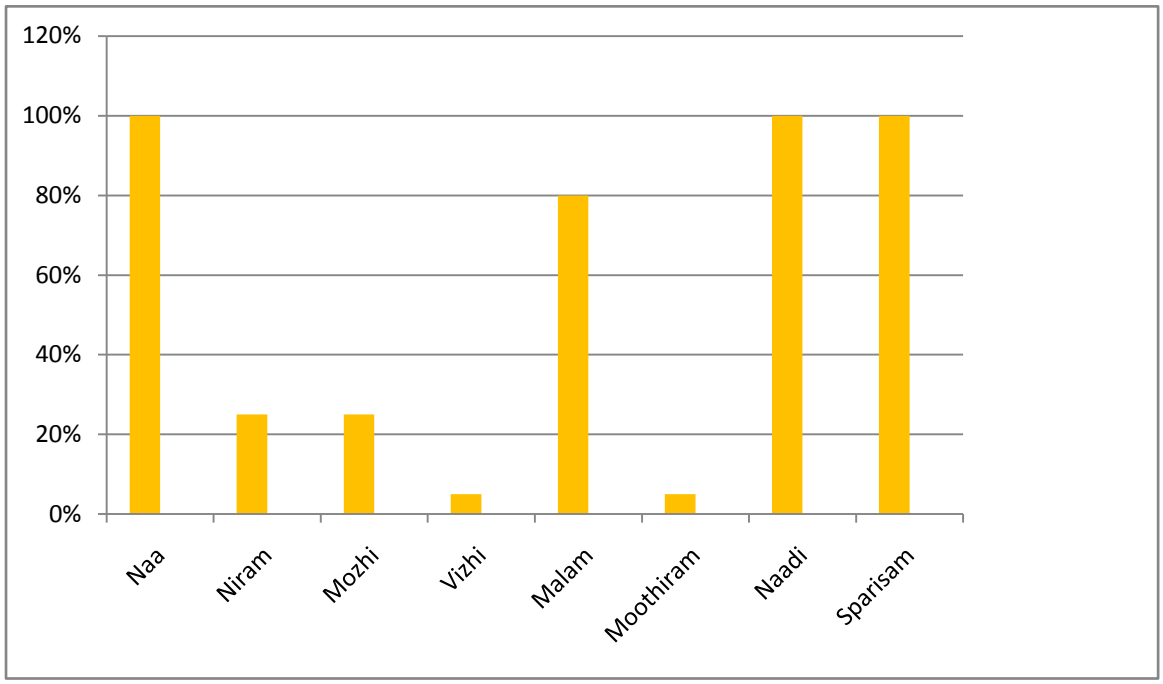
S.No	Udal Kattugal	No.of Cases	Percentage
1.	Saaram	40	100%
2.	Senneer	6	15%
3.	Oon	2	5%
4.	Kozhuppu	40	100%
5.	Enbu	40	100%
6.	Moolai	40	100%
7.	Venneer/Suronitham	-	-

In all the cases Saaram, Kozhuppu, Enbu and Moolai were affected (100%),Senneer was affected in 6cases (15%) and Oon was affected in 2 cases (5%)



17.Ennvagai Thervugal:

S.No	Ennvagai thervugal	No. of Cases	Percentage
1.	Sparisam	40	100%
2.	Naa	10	25%
3.	Niram	10	25%
4.	Mozhi	-	-
5.	Vizhi	2	5%
6.	Malam	32	80%
7.	Moothiram	2	5%
8.	Naadi	40	100%



Naadi - Pitha Vatham 13 cases (32.5%)

Vatha Pitham 25 cases (62.5%)

Pitham Kapham 2 cases (5%)

18.Yakkai Ilakkanam (Physical Constitutions)

S.No	Yakkai Ilakkanam	No.of Cases	Percentage
1.	Vatha udal	2	5%
2.	Pitha udal	-	-
3.	Kapha udal	6	15%
4.	Thontha udal	32	80%

Out of 40 cases were of Thontha udal. Out 32 cases, 16 pitha vatha udal and 16 vatha pitha udal.

19. Assessment of Effect of Theraphy:

Marked Effect:

- No longer any clinical manifestations
- Patient could work and live normally
- No recurrence after some months.

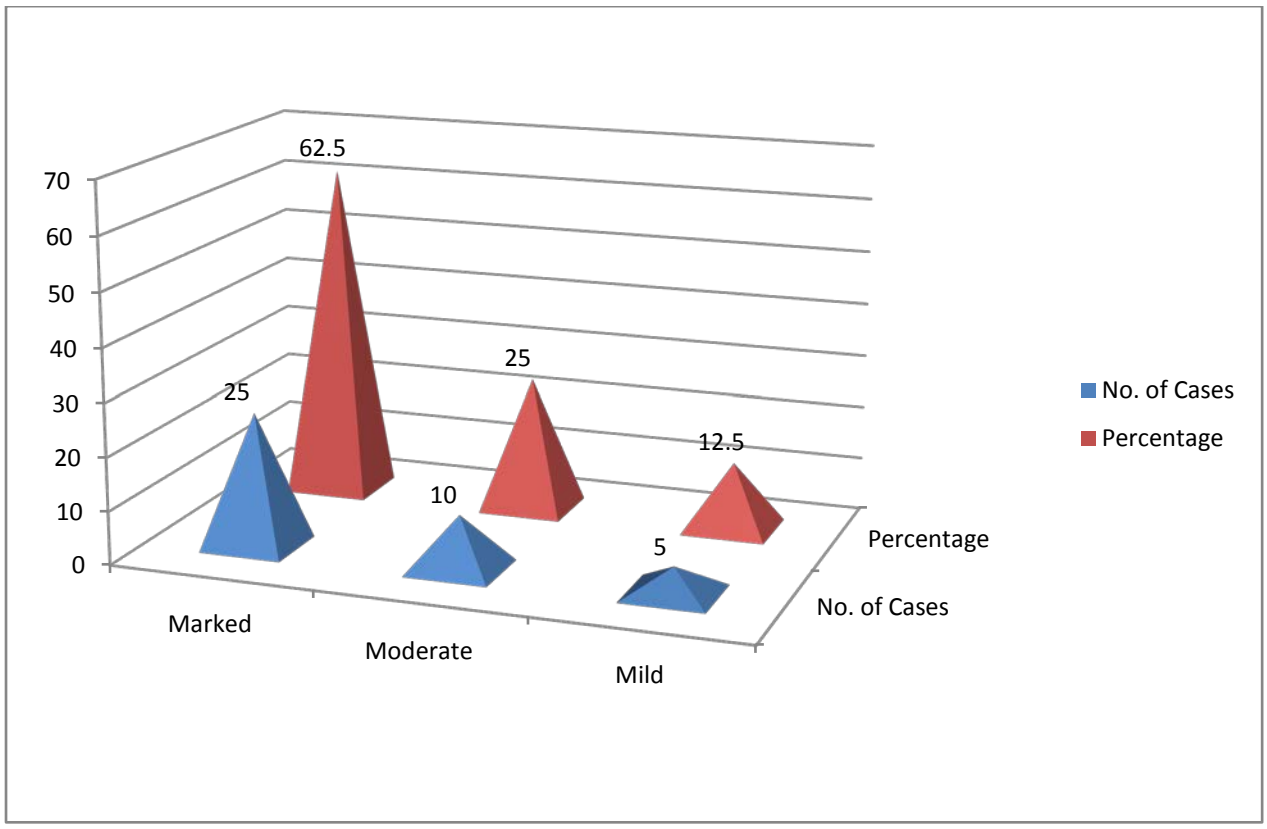
Moderate Effect:

- Moderate reduction of manifestations.
- Slight pain after movement

Mild Effect:

- Slight reduction in the clinical manifestation
- With relapse

Effect of therapy	No.of Cases	Percentage
Marked	25	62.5%
Moderate	10	25%
Mild	5	12.5%



Joint line tenderness (Knee) in Inpatients:

S.No	Patient Name	Age/Sex	Ip.No	Before Treatment in Grades	After Treatment in Grades
1.	Subbiah	70/M	2268	III	I
2.	Sudaliammal	60/F	2269	III	I
3.	Lakshmi	75/F	2337	II	Nil
4.	Veerammal	65/F	2569	II	I
5.	Gandhimathi	58/F	2723	III	I
6.	Vadivel	70/M	2933	II	I
7.	Nainar	70/M	3060	II	I
8.	Muthusamy	58/M	3082	II	Nil
9.	Nambi	69/M	3108	III	II
10.	Nalla thai	65/F	3113	III	I
11.	Arumugam	56/M	3132	III	I
12.	Gomu	60/F	3187	II	I
13.	Muniyandi	68/M	3204	II	Nil
14.	Shanmugathai	69/F	3362	II	Nil
15.	Peter	54/M	3367	II	I
16.	Paul nadar	65/M	3372	II	I
17.	Saraswathy	60/F	3940	III	I
18.	Petchiammal	70/F	4352	III	I
19.	Michelammal	58/F	4361	III	II
20.	Subbiah	65/M	4441	II	I

Assessment of joint tenderness

Grade I : The patient says the joint is tender

Grade II : The patient winces

Grade III : The patient winces and withdraws the affected part

Grade IV : The patient will not allow the joint to be touched.

Joint line tenderness (Knee) in Outpatients:

S.No	**Patient Name**	**Age/Sex**	**Ip.No**	**Before Treatment in Grades**	**After Treatment in Grades**
1.	Vadivel	62/M	52172	III	I
2.	Raja	45/M	52490	II	Nil
3.	Santha	60/F	52539	III	II
4.	Velammal	42/F	56218	II	Nil
5.	Santhi	47/F	56576	III	Nil
6.	Suresh	40/M	56918	II	I
7.	Shanmugavel	65/M	57259	III	I
8.	Kannan	60/M	58001	II	I
9.	Nainar	60/M	58893	III	I
10.	Petchiammal	50/F	60777	II	Nil
11.	Muthulakshmi	40/F	61417	II	Nil
12.	Lakshmi	60/F	62802	III	I
13.	Subbulakshmi	57/F	65413	III	I
14.	Petchiammal	53/F	67171	III	I
15.	Saraswathy	50/F	72049	II	Nil
16.	Saraswathy	50/F	74170	III	II

17.	Thavasi Nadar	70/M	76277	III	I
18.	Arumugam	55/M	79076	II	I
19.	Madasamy	65/M	94113	III	I
20.	Ayishabeevi	47/F	94118	III	I

Assessment of joint tenderness

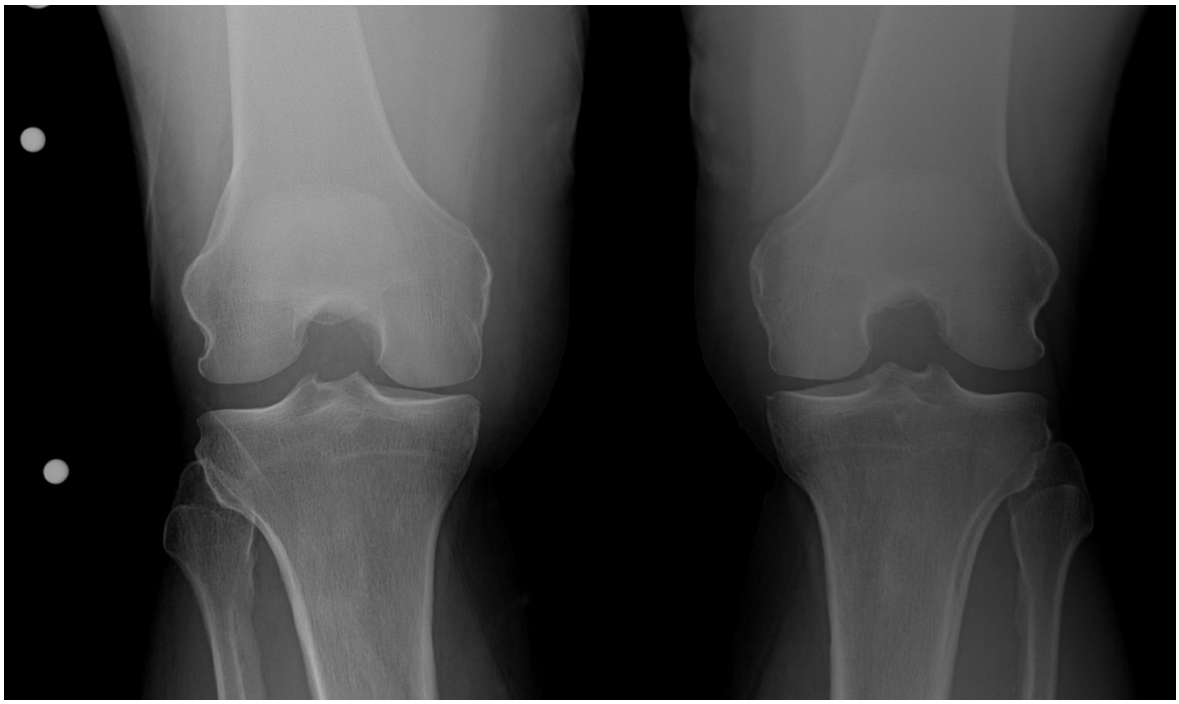
Grade I : The patient says the joint is tender

Grade II : The patient winces

Grade III : The patient winces and withdraws the affected part

Grade IV : The patient will not allow the joint to be touched.

SUBBIAH, Age 60, Male



Nambi, Age 70, Male

ASSESSMENT OF SWELLING IN INPATIENT

S.NO	I.P. NO	NAME	AGE/SEX	BEFORE TREATMENT						AFTER TREATMENT					
				RT(CM)			LT(CM)			RT(CM)			LT(CM)		
				Upper	Middle	lower	upper	middle	lower	Upper	middle	lower	upper	Middle	Lower
1	2269	Sudali ammal	60/F	32	34.5	35	31	34	35.5	31	34	34.5	30.5	33	35
2	2569	Veer ammal	65/F	34	35.5	35	33.5	34.5	34	33.5	35	34.5	33.5	35	33.5
3	2933	Vadivel	70/M	34.5	35	35.5	35	36	35.5	34	34.5	35	35	35.5	35
4	3060	Nainaar	70/M	35	34	36	35.5	35	35.5	34.5	33	35.5	35	34.5	35
5	3108	Nambi	69/M	36	34	35	35	33.5	34	36	34	55	33.5	34	36
6	3204	Muiyandi	68/M	37	35	36	35	34	35.5	36	34	35	35	33.5	35
7	3367	Peter	54/M	35	34.5	35	34	33.5	33	34.5	34	34	34	33.5	33
8	3113	Nallathai	65/F	36	35	34.5	35	34.5	34	35.5	34	33.5	35	34.5	34
9	3132	Arumugam	56/F	36	35	34	38	35.5	36	36	35	34	36	35	34.5
10	3187	Gomu	60/F	35	34	33.5	36	34	35.5	35	34	33.5	35	33.5	35
11	3940	Saraswathi	60/F	36	35	34.5	35	34.5	34	35.5	34	34	35	34.5	34
12	4361	Mikkel ammal	58/F	35	34.5	33	35.5	34	35	34.5	34	33	35	33.5	34.5

LIST OF OUT PATIENT IN SWELLING															
S.NO	O.P NO	NAME	AGE/SEX	Before treatment						After treatment					
				RT			LT			RT			LT		
1	52537	Shratha	60/F	37	35	36	35	34	33	35	34.5	35	35	34	33
2	57259	Shanmuga vel	65/M	36	35	34.5	35	34	33.5	35.5	34.5	34	34	33.5	33
3	58893	Nainaar	60/M	35	34.5	33.5	36	35	34	35	34.5	33.5	35	34	33
4	72049	Saraswathi	50/F	33.5	33	33.5	35	34.5	35	33.5	33	33.5	34	33.5	34
5	94113	MadasamY	65/M	35	34	33.5	34.5	33	34.5	34.5	33	34	34	33	34
6	94118	Ayisha beevi	47/F	36	35	35.5	37	35.5	35	35.5	34.5	35	36.5	35	34.5
7	61417	Muthu lakshmi	40/F	35	33.5	34	35	33.5	34	34	33	33.5	35	33.5	34
8	65413	Subbu lakshmi	57/F	36	35	34.5	35	34	33.5	35.5	34	34.5	34.5	33.5	33

Among 20 cases :

Marked Effect - 8 cases

Moderate - 10 cases

Mild - 2 cases

OP CASES - CLINICAL IMPROVEMENT

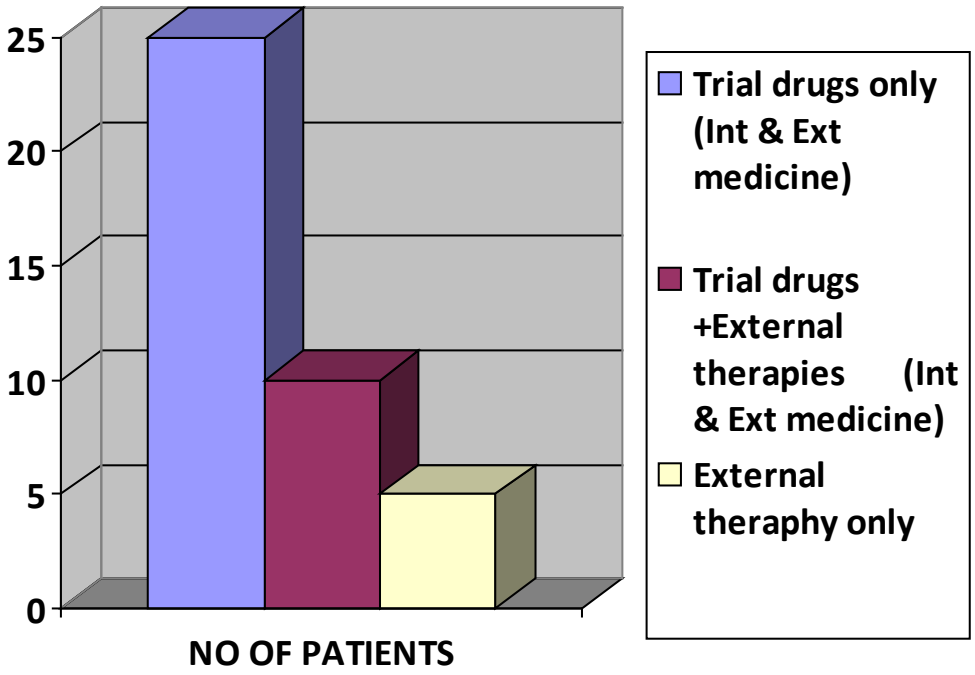
Sl. No	OP NO	NAME	AGE	SEX	DOA	DOD	TREATED DAYS	RESULT
1	52172	Vadivel	62	M	20.07.12	01.09.12	42	Marked
2	52490	Raja	45	M	25.07.12	08.09.12	43	Marked
3	52539	Shantha	60	F	03.08.2	17.09.12	55	Moderate
4	56218	Velammal	42	F	08.08.12	18.10.12	40	Marked
5	56576	Shanthi	47	F	16.08.12	20.10.12	66	Moderate
6	56918	Suresh	40	M	17.08.12	17.10.12	60	Marked
7	57259	Shanmugavel	65	M	21.08.12	10.01.13	109	Marked
8	58001	Kannan	60	M	09.08.12	09.10.12	60	Moderate
9	58893	Nainaar	60	M	03.08.12	07.11.12	64	Marked
10	60777	Petchiammal	50	F	10.08.12	06.10.12	57	Marked
11	61417	Muthulakshmi	40	F	23.08.12	25.10.12	63	Marked
12	62802	Lakshmi	60	F	25.08.12	12.10.12	47	Moderate
13	65413	Subbulakshmi	57	F	28.08.12	30.12.12	63	Marked
14	67171	Petchiammal	53	F	01.09.12	30.11.12	90	Marked
15	72049	Saraswathi	50	F	05.09.12	28.12.12	83	Moderate
16	74170	Saraswathi	50	F	06.09.12	10.12.12	64	Marked
17	76777	Thavasi Nadar	70	M	11.09.12	01.01.13	53	Moderate
18	79076	Arumugam	55	M	12.09.12	10.01.13	60	Marked
19	94113	Madasamy	65	M	26.10.12	12.01.13	77	Marked
20	94118	Ayisha Beevi	47	F	14.09.12	20.10.12	36	Moderate

IP CASES - CLINICAL IMPROVEMENT

Sl. No	IP NO	NAME	AGE	SEX	DOA	DOD	TREATED DAYS	RESULT
1	2268	Subbaiah	70	M	23.07.12	22.09.12	62	Moderate
2	2269	Sudaliammal	60	F	23.07.12	29.08.12	35	Mild
3	2337	Lakshmi	75	F	25.07.12	26.08.12	33	Marked
4	2569	Veerammal	65	F	28.07.12	01.09.12	36	Marked
5	2728	Kanthimathi	50	F	10.08.12	15.09.12	36	Marked
6	2933	Vadivel	70	M	15.08.12	22.09.12	38	Moderate
7	3060	Nainaar	70	M	18.08.12	30.09.12	43	Moderate
8	3082	Muthusamy	50	M	20.08.12	10.09.12	21	Marked
9	3108	Nambi	69	M	26.08.12	10.10.12	45	Mild
10	3113	Nallathai	65	M	01.09.12	15.10.12	45	Marked
11	3132	Arumugam	56	F	03.09.12	13.10.12	40	Marked
12	3187	Gomu	68	F	10.09.12	11.10.12	31	Marked
13	3204	Muniyandi	68	M	10.09.12	10.10.12	30	Marked
14	3362	Shanmugathai	69	F	20.09.12	25.10.12	35	Marked
15	3367	Peter	54	M	25.09.12	10.10.12	16	Moderate
16	3372	Paulnadar	65	M	26.09.12	19.10.12	25	Moderate
17	3940	Saraswathi	60	F	20.11.12	02.01.13	43	Mild
18	4352	Petchiammal	70	F	20.11.12	10.12.12	20	Moderate
19	4361	Mickalammal	58	F	26.11.12	12.12.12	17	Moderate
20	4441	Subbaiah	65	M	02.01.13	13.01.13	12	Mild

SELECTION OF PATIENTS:

TREATMENT OPTIONS	NO OF PATIENTS
Trial drugs only (Int & Ext medicine)	25
Trial drugs +External therapies (Int & Ext medicine)	10
External therapy only	5



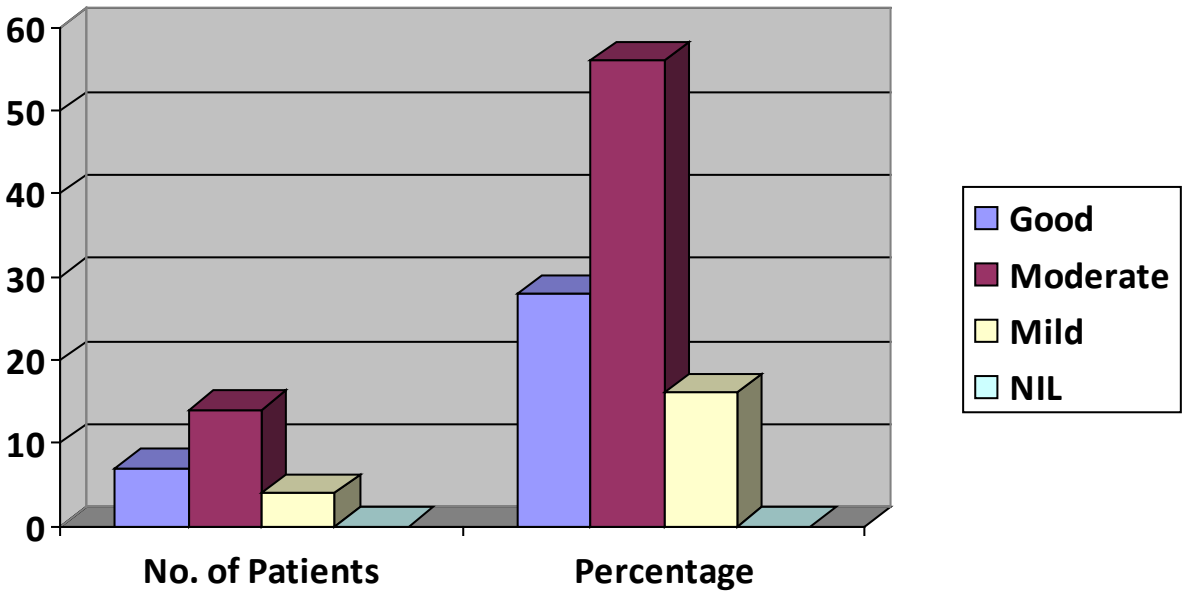
Inference:

This Clinical study includes 40 Patients, i.e. 20 from IP ward and 20 Patients from OP ward. 10 OP patients were given both Internal and External medicines, 15 IP cases were given Internal, External medicine alongwith external theraphy 5 IP cases, were given only External theraphy.

EFFECT OF TRIAL DRUG ALONE:

Effect of therapy is assessed from the above tabulated data.

Effect of the Therapy	No. of Patients	Percentage
Good	7	28
Moderate	14	56
Mild	4	16
NIL	0	0



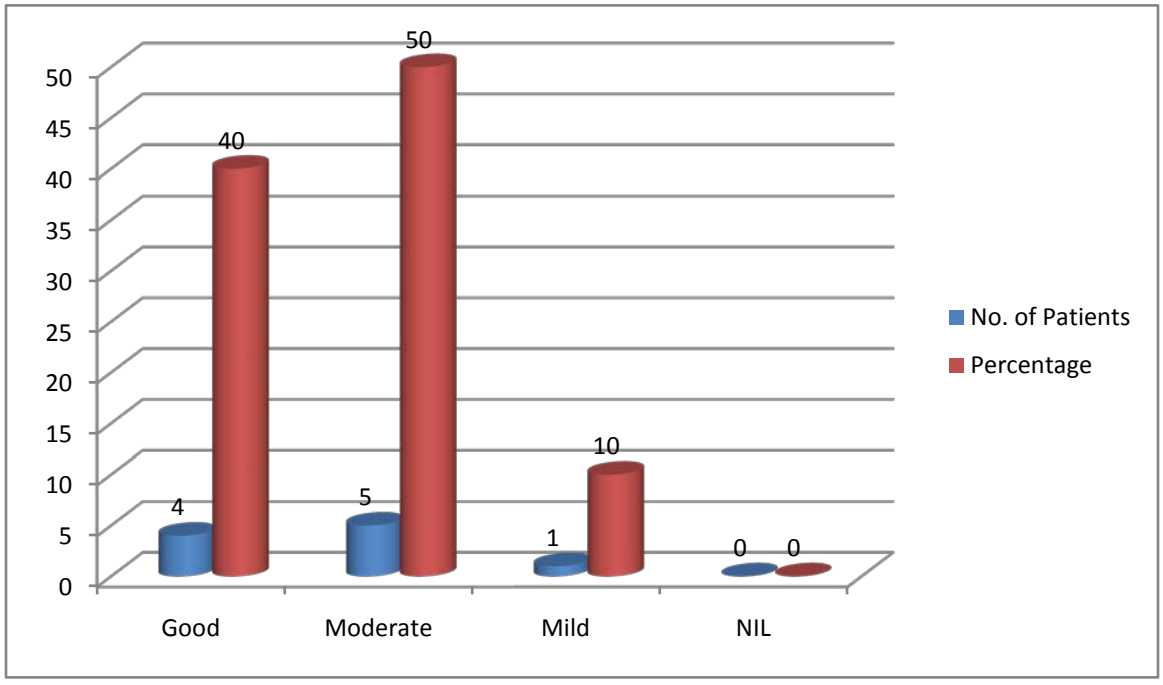
Inference:

By treating alone with trial drugs, 28 % of patients had good improvement,

56 % of patients had moderate improvement, 16% had mild improvement,

EFFECT OF TRIAL DRUG ALONG WITH COMPLEMENTARY THERAPIES:

EFFECT OF THERAPY	NO. OF PATIENTS	PERCENTAGE
Good	4	40
Moderate	5	50
Mild	1	10
No	0	0

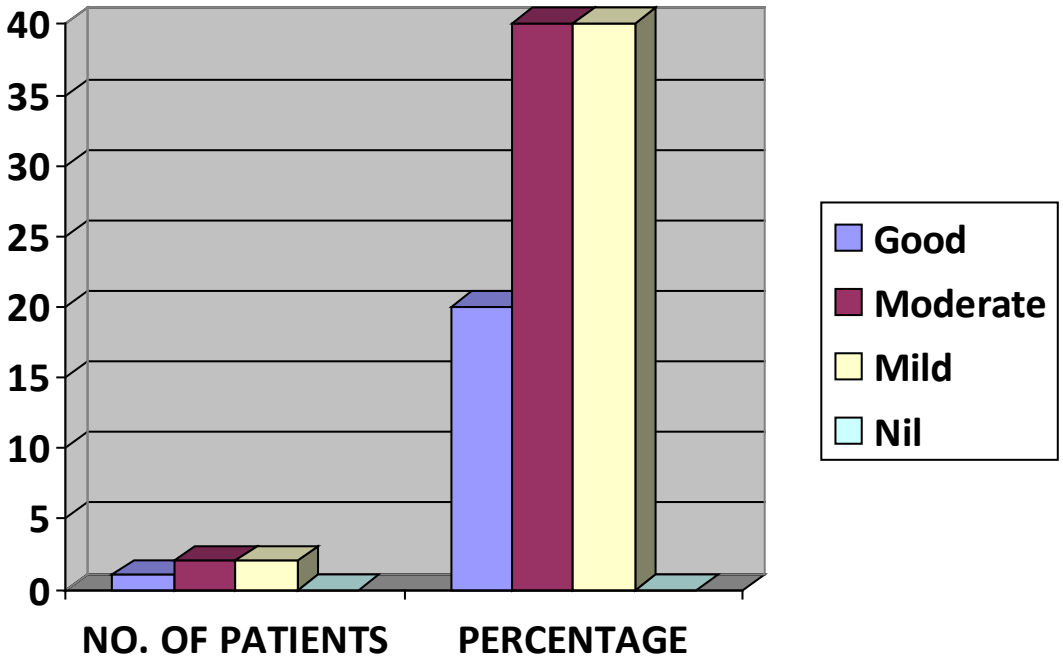


Inference:

By treating both with trial drugs and external therapies, 40 % of patients had good improvement, 50% of patients had moderate improvement and 10 % only had mild improvement.

EFFECT OF COMPLEMENTARY THERAPY ALONE:

EFFECT OF THERAPY	NO. OF PATIENTS	PERCENTAGE
Good	1	20
Moderate	2	40
Mild	2	40
Nil	0	0



Inference:

By treating external therapies only, 20% of patients had good improvement, 40% of patients had moderate improvement and 40 % only had mild improvement.

List of In Patients of PG III – Sirappu Maruthuvum Department – Blood Analysis Karungozhi Chooranam as internal medicine and Vidamutti Thylam as external medicine

S .No	IP .No	Name	Age /Sex	TC Cells/Cumm		DC Cells/Cumm						Hb mgs		ESR mm/hr				Sugar (mgs)		Urea (mgs)		Cholesterol (mgs)	
						BT			AT					BT		AT							
				BT	AT	P	L	E	P	L	E	BT	AT	½ hr	1hr	½ hr	1hr	BT	AT	BT	AT	BT	AT
1	2268	Subbaiah	70 M	8700	8900	56	41	3	55	43	2	11.2	11.4	22	44	10	20	76	78	22	20	124	124
2	2269	Sudaliammal	60 F	8900	9000	56	41	3	52	46	2	10.8	11	45	93	20	40	82	80	24	22	155	155
3	2337	Lakshmi	75 F	8700	8900	49	48	3	56	39	5	9	10	12	23	8	16	110	108	22	18	211	200
4	2569	Veerammal	65 F	8400	8600	56	39	5	56	41	3	11.5	11.8	24	56	12	24	112	110	29	24	178	175
5	2723	Kanthimathi	50 F	7500	7800	67	28	5	67	32	1	9.8	10	23	48	6	12	216	200	32	28	150	150
6	2933	Vadivel	70 M	7500	7800	60	36	4	60	38	2	11	11	16	11	3	6	79	75	33	30	177	175
7	3060	Nainaar	70 M	8200	8500	54	32	4	56	32	2	9	10	12	24	6	12	83	80	23	22	158	150
8	3082	Muthusamy	50 M	7000	7200	58	38	4	58	40	2	7	9	22	44	10	2	80	80	20	20	180	180
9	3108	Nambi	69 M	9800	9800	60	28	12	60	38	2	11	11.2	10	20	5	10	113	113	22	22	167	160
10	3113	Nallathai	65 M	8900	8700	67	30	3	65	32	3	9	10	23	48	10	20	79	79	23	23	177	177
11	3132	Arumugam	56 F	8000	8200	62	36	2	68	30	2	9.2	9.4	12	24	10	20	84	84	22	22	156	150
12	3187	Gomu	60 F	8200	8400	58	38	4	60	38	2	10	10	10	20	6	12	112	100	23	23	167	160
13	3204	Muniyandi	68 M	8400	8600	66	30	4	62	36	2	12.5	12.5	30	60	15	30	92	90	39	32	177	170
14	3362	Shanmugathai	69 F	7200	7400	68	34	4	65	34	1	9	9.2	12	24	12	24	80	80	30	20	175	170
15	3367	Peter	54 M	9000	9200	60	35	5	62	35	3	12.2	12	33	66	8	16	124	110	23	20	292	290
16	3372	PaulNadar	65 M	7900	7500	63	33	4	60	36	4	11.8	12	33	66	10	20	124	126	18	20	177	150
17	3940	Saraswathi	60 F	8100	8000	54	42	4	56	40	2	9	10	12	24	12	24	102	100	22	22	150	128
18	4352	Petchiammal	70 F	7200	7400	58	38	4	60	38	2	10.2	10.4	22	44	10	20	112	114	24	26	128	130
19	4361	Mickelammal	58 F	8000	8200	67	28	5	65	32	2	11	11	11	22	8	16	108	105	26	20	155	120
20	4441	Subbaiah	65 M	8700	8800	69	30	12	62	36	2	12.4	12	15	30	6	12	180	126	20	24	220	200

List of In Patients of PG III – Sirappu Maruthuvum Department – Blood Analysis Karungozhi Chooranam as internal medicine and Vidamuttithylam as external medicine

S. No	IP. No	Name	Age /Sex	TC Cells /Cumm		DC Cells/Cumm						Hb gms%		ESR mm/hr				Sugar (gms%)		Urea (gms%)		Cholesterol (gms%)	
						BT			AT					BT		AT							
				BT	AT	P	L	E	P	L	E	BT	AT	½ hr	1hr	½ hr	1hr	BT	AT	BT	AT	BT	AT
1	52172	Vadivel	62/M	8900	8700	59	38	3	65	33	2	10	10.2	13	25	10	20	74	78	22	20	162	160
2.	52490	Raja	45/M	7900	7700	56	39	5	59	39	2	13.5	13.5	2	5	2	5	76	78	20	18	193	150
3.	52539	Shantha	60/F	8200	8000	62	35	3	59	38	3	10.2	10.4	40	88	10	20	73	74	22	20	270	200
4.	56218	Velammal	42/F	8100	8000	63	34	3	62	38	0	12	12	12	24	6	12	80	80	18	18	128	120
5.	56576	Shanthi	47/F	8100	8200	62	36	4	62	36	2	12	12	10	20	5	10	78	78	22	20	169	150
6.	56918	Suresh	40/M	9200	9000	69	29	2	62	34	4	14.5	14.5	3	6	3	6	98	90	20	20	213	200
7.	57259	Shanmugavel	65/M	8300	8300	54	33	13	69	29	2	12	12	10	20	5	10	79	76	18	18	156	150
8.	58001	Kannan	60/M	8100	8200	62	36	2	62	36	2	12	12	10	20	6	12	82	80	22	20	181	180
9.	5893	Nainaar	60/M	8700	8500	59	37	4	60	38	2	13	13	9	21	3	6	78	78	18	18	168	150
10.	60777	Petchiammal	50/F	8500	8700	65	33	2	68	30	2	10.5	11	4	9	2	4	108	80	20	20	150	138
11	61417	Muthulakshmi	40/F	8100	800	62	36	2	59	37	4	12	122	10	20	10	20	78	78	22	20	150	150
12.	62802	Lakshmi	60/F	8700	8700	59	37	4	49	48	3	10	10.2	30	60	15	30	83	83	16	18	162	162
13.	65413	Subbulakshmi	57/F	7000	7200	49	48	3	62	36	2	10.5	10.5	20	24	6	12	90	92	15	16	168	168
14.	67171	Petchiammal	53/F	7500	7700	54	43	3	60	38	2	12	12	10	21	5	10	112	108	25	24	182	182
15.	72049	Saraswathi	50/F	8100	8100	60	38	2	59	38	3	10	10.4	24	50	6	12	82	80	20	20	179	170
16.	71470	Saraswathi	50/F	8400	8400	59	38	3	62	38	0	9.8	10	25	55	8	16	89	86	18	16	179	170
17.	76277	Thavasi Nadar	70/M	8100	8000	62	38	0	60	38	2	10.5	10.5	20	40	10	20	92	90	18	16	186	180
18.	79076	Arumugam	55/M	7500	700	54	43	3	49	48	3	12	12	10	21	10	20	112	112	25	22	182	180
19.	94113	Madasamy	65/M	8400	8600	58	39	3	58	39	3	12.2	12.4	4	44	4	8	192	198	29	24	181	180
20.	94118	Ayisha Beevi	47/F	8300	8400	68	30	2	68	32	0	11.2	11	13	25	10	20	171	170	31	26	223	220

List of In Patinets of PG III – Sirappu Maruthuvam Department – Urine and Motion Analysis Karungozhi Chooranam as internal medicine and vidamutti thylam as external medicine

S.No	I.P.No	Name	Age/Sex	Urine Analysis						Motion Analysis					
				BT			AT			BT			AT		
				Alb	Sugar	Dep	Alb	Sugar	Dep	Ova	Cyst	Ocualt blood	Ova	Cyst	Ocualt blood
1	2268	Subbaiah	70 M	Nil	Nil	2-5pus	Nil	Nil	2-3 pus	Nil	Nil	Nil	Nil	Nil	Nil
2	2269	Sudaliammal	60 F	Nil	Nil	2-3 pus	Nil	Nil	2-3 pus	Nil	Nil	Nil	Nil	Nil	Nil
3	2337	Lakshmi	75 F	Nil	Nil	1-2 pus	Nil	Nil	1-2 pus	Nil	Nil	Nil	Nil	Nil	Nil
4	2569	Veerammal	65 F	Nil	Nil	1-2 epith	Nil	Nil	1-2 epith	Nil	Nil	Nil	Nil	Nil	Nil
5	2723	Kanthimathi	50 F	Nil	Nil	1-2 pus	Nil	Nil	1-2 pus	Nil	Nil	Nil	Nil	Nil	Nil
6	2933	Vadivel	70 M	Nil	Nil	1-5 pus	Nil	Nil	1-5 pus	Nil	Nil	Nil	Nil	Nil	Nil
7	3060	Nainaar	70 M	Nil	Nil	1-2 epi	Nil	Nil	1-2 epi	Nil	Nil	Nil	Nil	Nil	Nil
8	3082	Muthusamy	50 M	Nil	Nil	NAD	Nil	Nil	NAD	Nil	Nil	Nil	Nil	Nil	Nil
9	3108	Nambi	69 M	Nil	Nil	1-2 pus	Nil	Nil	1-2 pus	Nil	Nil	Nil	Nil	Nil	Nil
10	3113	Nallathai	65 M	Nil	Nil	1-2 pus	Nil	Nil	1-2 pus	Nil	Nil	Nil	Nil	Nil	Nil
11	3132	Arumugam	56 F	Nil	Nil	1-3 pus	Nil	Nil	1-3 pus	Nil	Nil	Nil	Nil	Nil	Nil
12	3187	Gomu	60 F	Nil	Nil	Few PW	Nil	Nil	Few PW	Nil	Nil	Nil	Nil	Nil	Nil
13	3204	Muniyandi	68 M	Nil	Nil	1-2 pus	Nil	Nil	1-2 pus	Nil	Nil	Nil	Nil	Nil	Nil
14	3362	Shanmugathai	69 F	Nil	Nil	1-2 pus	Nil	Nil	1-2 pus	Nil	Nil	Nil	Nil	Nil	Nil
15	3367	Peter	54 M	Nil	Nil	1-2 epithyl	Nil	Nil	1-2 epithyl	Nil	Nil	Nil	Nil	Nil	Nil
16	3372	PaulNadar	65 M	Nil	Nil	1-3 pus	Nil	Nil	1-3 pus	Nil	Nil	Nil	Nil	Nil	Nil
17	3940	Saraswathi	60 F	Nil	Nil	1-2 pus	Nil	Nil	1-2 pus	Nil	Nil	Nil	Nil	Nil	Nil
18	4352	Petchiammal	70 F	Nil	Nil	1-2 epi	Nil	Nil	1-2 epi	Nil	Nil	Nil	Nil	Nil	Nil
19	4361	Mickelammal	58 F	Nil	Nil	1-2 pus	Nil	Nil	1-2 pus	Nil	Nil	Nil	Nil	Nil	Nil
20	4441	Subbaiah	65 M	Nil	Nil	NAD	Nil	Nil	NAD	Nil	Nil	Nil	Nil	Nil	Nil

List of In Patinets of PG III – Sirappu Maruthuvam Department – Urine and Motion Analysis Karungozhi Chooranam as internal medicine and vidamutti thylam as external medicine

S.No	I.P.No	Name	Age/Sex	Urine Analysis						Motion Analysis					
				BT			AT			BT			AT		
				Alb	Sugar	Dep	Alb	Sugar	Dep	Ova	Cyst	Ocualt blood	Ova	Cyst	Ocualt blood
1	52172	Vadivel	62/M	Nil	Nil	NAD	Nil	Nil	NAD	Nil	Nil	Nil	Nil	Nil	Nil
2	52490	Raja	45/M	Nil	Nil	8-10 pus 1-2 epi	Nil	Nil	1-2 epi	Nil	Nil	Nil	Nil	Nil	Nil
3	52539	Shantha	60/F	Nil	Nil	Fewpus epi cells	Nil	Nil	Fewpus epi cells	Nil	Nil	Nil	Nil	Nil	Nil
4	56218	Velammal	42/F	Nil	Nil	2-4 pus cells	Nil	Nil	1-2 pus cells	Nil	Nil	Nil	Nil	Nil	Nil
5	56576	Shanthi	47/F	Nil	Nil	NAD	Nil	Nil	NAD	Nil	Nil	Nil	Nil	Nil	Nil
6	56918	Suresh	40/M	Nil	Nil	1-3 pus cells	Nil	Nil	1-3 pus cells	Nil	Nil	Nil	Nil	Nil	Nil
7	57259	Shanmugavel	65/M	Nil	Nil	Few Puscells	Nil	Nil	Few Puscells	Nil	Nil	Nil	Nil	Nil	Nil
8	58001	Kannan	60/M	Nil	Nil	Fewpus	Nil	Nil	Fewpus	Nil	Nil	Nil	Nil	Nil	Nil
9	5893	Nainaar	60/M	Nil	Nil	Fewpus	Nil	Nil	Fewpus	Nil	Nil	Nil	Nil	Nil	Nil
10	60777	Petchiammal	50/F	Nil	Nil	1-2 epi	Nil	Nil	1-2 epi	Nil	Nil	Nil	Nil	Nil	Nil
11	61417	Muthulakshmi	40/F	Nil	Nil	NAD	Nil	Nil	NAD	Nil	Nil	Nil	Nil	Nil	Nil
12	62802	Lakshmi	60/F	Nil	Nil	NAD	Nil	Nil	NAD	Nil	Nil	Nil	Nil	Nil	Nil
13	65413	Subbulakshmi	57/F	Nil	Nil	1-2 epi cells	Nil	Nil	1-2 epi cells	Nil	Nil	Nil	Nil	Nil	Nil
14	67171	Petchiammal	53/F	Nil	Nil	NAD	Nil	Nil	NAD	Nil	Nil	Nil	Nil	Nil	Nil
15	72049	Saraswathi	50/F	Nil	Nil	NAD	Nil	Nil	NAD	Nil	Nil	Nil	Nil	Nil	Nil
16	71470	Saraswathi	50/F	Nil	Nil	1-2 pus	Nil	Nil	1-2 pus	Nil	Nil	Nil	Nil	Nil	Nil
17	76277	Thavasi Nadar	70/M	Nil	Nil	NAD	Nil	Nil	NAD	Nil	Nil	Nil	Nil	Nil	Nil
18	79076	Arumugam	55/M	Nil	Nil	NAD	Nil	Nil	NAD	Nil	Nil	Nil	Nil	Nil	Nil
19	94113	Madasamy	65/M	Nil	Nil	NAD	Nil	Nil	NAD	Nil	Nil	Nil	Nil	Nil	Nil
20	94118	Ayisha Beevi	47/F	Nil	Nil	2-3 epi	Nil	Nil	2-3 epi	Nil	Nil	Nil	Nil	Nil	Nil

DISCUSSION

Azhal Keel Vayu is one of the major joint problems i.e, really the weight bearing joints affected which makes the elder people most troublesome especially. The disease Azhal keel vayu as explained in siddha system of medicine has got close resemblance with that of osteoarthritis of modern system of medicine.

The drug to treat this disease were **Karungozhi Chooranam**- Internally and **Vidamutty thylam** Externally. This study is trial to throw light the role of the drugs in all aspects in the management of the disease.

Fourty cases of Azhal keel vayu were diagnosed clinically on the basis of sings and symptoms described in the text Siddha maruthuvam. The clinical diagnosis was made confirmed by means of other siddha aspects of examinations out of 20 cases in the out patients ward and 20 cases in the inpatients ward – in the **DEPARTMENT OF PG SIRAPPU MARUTHUVAM**.

Age distribution:

According to this study, most of the patients were above the age of 55 which was already explained by modern science that degeneration due to aging is important cause for osteoarthritis.

Sex Distribution:

Among the Fourty cases,22(55%)were male and 18(45%)were female patients.

Prevalence of affecting the joints:

In **Azhal Keel Vayu** the hallmark of involvements are articular joints, perdominantly **Knee Joint (100%).**

Duration of the illness:

According to this study the duration of the illness varies fom 1month to 1yr.

Socio – economic status:

Among the 40cases selected for this study 34cases (85%)were poor class,4cases10% middle class and only 2cases(5%)were from rich background.

Occupational status

Occupational place the important role in the aetiology of **Azhal Keel Vayu.** Ryot for 15cases(40%)Manual labour account for 12(30%) cases.Home makers 10cases(25%) and 5% of teachers were also affected by the disease.The main cause of this disease is repeated use of joints.

Clinical Manifestation:

The major clinical symptom reported to be pain in the joints and tenderness along joint line and crepitation (100%) in the knee joints followed by 85% had limited movement of the joints,15% of them had constipation 10% of them had morning stiffness and 55% had swelling in knee joint.

Paruva Kaalam:

Kaar Kaalam, Koothir Kaalam and Muthuvenil Kaalam a as 45%, 37.5%, and 17.5% shows their incidence.

Thinai:

The incidence of Azhal Keelvayu is high in people from Martutha Nilam (70%), Neithal Nilam (20%) and Kurinchi Nilam (5%).

Generally in marutha nilam, all the three doshas are in physiological ratio, but for these 40 patients the occupation, age and Pollution alter the physiological ratio and cause the disease.

Diet:

I have selected all cases are 100% Non-vegetarian because my trial drug is Karungozhi chooranam.

Almost all the patients were found of eating high calorific food like junk foods, deep fried items which results in over weight. Out of 40 patients, 6cases were overweight .

Disturbance in Vatham:

In the fourty cases, in all of them (100%) Viyanan and Samanan were affected. Devathathan was affected in 35 cases (87.5%).Abanan was affected in 32 (80%) cases. Koorman was affected in 2 (5%).

Disturbance in Pittham:

According to this study, Sathagapitham was affected in all 40 cases 100% Analapitham in 10 cases (25%) and Ranjagapitham in 6 (15%) cases.

Disturbance in Kabam:

According to this study santhigam was affected in all the cases (100%).Kilethagam was affected in 10 (25%) cases.

Udal Kattugal:

Among the Seven Udal Kattugal, Saaram, Kozhuppu, Enbu and Moolai were affected in 40 (100%) cases. Senneer were affected in 6(15%).

Derangement in eight parameters in our systems (Envagi thervugal):

According to this study, in Ennvagai thervugal, Naadi was affected in all the cases (100%), Malam was affected in 32 cases(80%).Naa and Niram were affected in 10 cases (25%) Sparism was affected in (100%) 40 cases. Vizhi was affected in 2 cases (5%).

Laboratory investigation:

- Blood (TC, DC, ESR, Hb %, Sugar, Urea, Cholestrol)
- Urine (albumin, Sugar, deposits) were done for all 60 cases.
- Anaemia was found in 6 cases (15%) There was not much remarkable changes in the TCand DC.

Effect of therapy:

On the basis of assessment of the curative effect of the trial drugs,

- Marked effect was recorded in 60% of cases.
- Moderate effect was observed in 30% of cases
- Mild effect was observed in 10%.

The trial drugs showed improvement in prognosis of the disease clinically rather than radiographically.

Biochemical Analysis:

Bio Chemical analysis of the trial drug was done in the Department of Bio-Chemistry, Government Siddha Medical College, Palayamkottai.

Karungozhi Chooranam contains.

- Calcium
- Sulphate
- Phosphate
- Ferrous iron
- Chloride
- Aminoacid
- Unsaturated compound

All these Bio-Chemical products are much important for bone growth and its maintenance.

No toxic or side effects were clinically observed in any cases.

Pharmacological Analysis

Pharmacological studies done in Pharmacology Department of Government Siddha Medical College, Palayamkottai. The results were reported as follows.

Internal Medicine:

Karungozhi Chooranam

- Significant Analgesic action
- Significant Acute Anti –inflammatory action
- Significant Chronic Anti – inflammatory action

External Medicine:

Vidamutty thylam has significant Analgesic action and significant Acute Anti inflammatory action.

SUMMARY

Fourty cases of **Azhal Keel Vayu**, was clinically diagnosed initially. Out of them twenty cases were admitted in the in-patient **PG Sirappu Maurthuvam** Ward, Govt. Siddha Medical College Hospital, Palayamkottai were observed for clinical diagnosis, lab diagnosis and treatment by the trial medicines. . Among them **twenty cases** treated in out **patients** ward in PG Sirappu Maruthuvam.

- Clinical diagnosis of Azhal keel vayu was done on the basis of clinical features described in Sabapathi Manuscript, and siddha maruthuvam text.
- Before starting the treatment, careful detailed history was taken out and recorded for the 60 selected cases only.
- The various Siddha aspects of examination of the disease were carried out and data were recorded in the proforma.
- Laboratory diagnosis of Azhal Keel Vayu was done by modern methods of examination in the Govt. Siddha Medical College Hospital, Palayamkottai. Confirm the diagnosis in siddha syestem with the help of modern parameter given to all cases .
- The trial medicine choosen for both internal and external treatment and the management of Azhal Keelvayu.
    - **Karungozhi Chooranam** normal dose 500mg thrice a day with hot water.
    - **Vidamutti Thylam**(Externally).
- The observation made during the clinical study shows that the main drug Guggulu chooranam **(Internally)** is clinically effective. It has **significant Analgesic action and Significant of Acute and Chronic Anti Inflammatory Action.**
- The action of **Vidamutti thylam (Externally)** over the affected joint was also clinically effective. It has **Significant Analgesic action and Significant Acute - Anti Inflammatory Action.**

- Biochemical analysis of **Karungozhi chooranam** contains calcium,sulphate,chloride,ferrous iron,phosphate,unsaturated compound and amino acid which are most important for bone growth.
- Efficacy of complementary therapies are analysed
- The drugs were found to be **free from adverse effects**.

CONCLUSION

Vadha diseases dealt by many of the siddhars like Yugi, Agathiyar, Sarabenthirar etc… Azhal keel vaayu described in sabapathy kaiyedu below the topic of keel vaayu.

Keel vaayu is most common problem in elderly people. in siddha literature said that the major problem of "Narai, Thirai, Moopu". In moopu there are many problems will be arised. Degenarative changes of joints occur in this stage, Deformity also occur.

For this reason I have chosen this disease for my dissertation. I have selected medicine "Karungozhi Chooranam" from of "Agathiyar 2000". Indication of this trial drug for vadha disease such as muttu vali, Udhira vadha suronitham. Ingredient of trial drug contains anti vadha properties. This trial drug undergone for the pharmacological study which shows analgesic and anti inflammatory peoperties . Fourty patients selected for this study were treated with **Karungozhi Chooranam** (**Internally) 500 mg thrice a day** with **hot water** and **Vida mutti thylam (Externally).**

Clinical result shows improvement as following,

Marked effect in 25 cases	-	62.5%
Moderate effect in 10 cases	-	25%
Mild effect in 5 cases	-	12.5 %

It was noted that the internal drug **Karungozhi Choornam** was free from adverse side effects i.e. no cases were reported either nausea, vomiting, gastric irritation, other GI disturbance and allergic manifestations.

External application **Vida mutti thylam** was not irritant i.e no cases were reported itching or eruption whenever applied.

ANNEXURE I

PROPERTIES OF THE TRIAL DRUG

INTERNAL MEDICINE – KARUNGOZHI CHOORANAM

“கோழிக் காலிறகு தலையும் போக்கி கதிக்கமுது கது

பிளந்துகுடல் வாங்கி போட்டுத்

கார்போ கரிசிகருஞ் சீரகம் நற்சீரகஞ் சாதிக்காய்

சாதிப்பத் திரியினேலம்

பெருங்காயஞ் சுக்கினுடன் மிளகு திப்பிலி யோமம் பேரான

லவங்கப்பட்டை வசம்புள்ளி

காத பேரரத்தை புன்முருங்கை வேர்செங்கத் தாரித்தோ.

சங்குமயிலடிவேர் குருந்தன் வேரே

வேறு சரிநின்ற யதின்பாதி பறங்கிப்பட்டை

மிகத்தூள் பண்ணி

காயாட்டு நீர்பிசைந்து கொண்டு இதைக்கோழி

தனிலடைத்து யிருகக் கட்டி

காத திருகுகள்ளி நறுக்கியொரு பானையிட்டு நீர்விட்டு

மேல்வேருகட்டி உடன்மேல் வைத்து

ஆவி போகாமல் மேன்மூடி தீயெரித்து வெந்து திறந்து வாங்கே

கனிய கோழியதனெலும்பு போட்டு மருந்துடனே

சதைகாய்ந்து வச்ரகாயம்பண்ணி

அதனுடனே வெருகடிப் பிரமாணங் கொள்ளு பத்தியமு

முப்பு புளிபால் யோராகா

சிவரு சூலைகிரந்தி தீரும்**சந்து வலி**விப்புருதி உதிரவாயு

கான வாதமுதல் சூலைநோய்தீரும் பொறுத்த

குக்குடாதியதி புகலுவோமே

INGREDIENTS

Karungozhi	-	1 in number
Karunjeerakam	-	35gm
Nareerakam	-	35gm
Chathipathiri	-	35gm
Perungayam	-	35gm
Milagu	-	35gm
Omam	-	35gm
Vasambu	-	35gm
Perarattai	-	35gm
Senkathari Pattai	-	35gm
Nayuruvi Ver	-	35gm
Karbokarisi	-	35gm
Sathikkai	-	35gm
Elakkai	-	35gm
Chukku	-	35gm

Thippili	-	35gm
Lavanga Pattai	-	35gm
Poondu	-	35gm
Punmurugai ver	-	35gm
Sankan ver	-	35gm
Paranki pattai	-	332.5gm

METHOD OF PREPARATION:

All raw drugs are mixed with goat urine. These are kept inside the cleaned cloth along with karungozhi and tied tightly. Take a mud pot and till it with water then add partially crushed thirugukalli samuloom. The mouth of the pot now closed by a cleaned cloth. The karungozhi along with drug is placed over the cloth and then it is boiled and streamed. Then it is dried and powdered.

Dose : 1.5gm

Adjuvant : Hot water

Pathiyam :

Salt, tarmarind, milk, butter milk should be avoided

Medicinal Uses : Santhuvali, vippurathi, uthiravayu, kiranthi.

PROPERTIES OF THE INGREDIENTS:

1. கருங்கோழி

Suvai	:	Inippu
Thanmai	:	Veppam
Pirivu	:	Kaarppu
Part used	:	Flesh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S.No

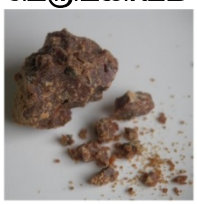
மிளகு

வசம்பு

இஞ்சி

கருஞ்சீரகம்

பெருங்காயம்



இலவங்கபட்டை

சீரகம்

ஜாதிக்காய் , ஜாதிபத்ரி

பேரரத்தை

ஏலம்

பூண்டு

திப்பிலி

பரங்கிப்பட்டை

செங்கத்தாரிப்பட்டை

ACTIONS

Stimulant

Aphrodisiac

CONSTITUENTS

Karungozhi contains many kinds of **amino acids** (18 kinds of amino acid including the 8 essential amino acids for human body). **Vitamin B1, B2, B6, B12, C and E, niasin, protein, fat, calcium phosphorus, iron, nicotinic acid etc.**

Laboratory tests show that Karungozhi contains certain hormones, blue pigments of amino acids, which are required by the human body. These factors can raise **blood cells and haemoglobin.** Abundance clinical experience has indicated that Karungozhi has a particular effectiveness in treating neurodebility (a condition of nervous debility suppred to be dependant upon impairment in the functions of the spiral cord), osteomalasia (a condition marked by softening of the bones), lot of hormonal problems like women's distress, sterility habitual abortion, blood leucorrhoea, metorrhegia and sickness after giving birth to off spring and also aids in curing pulmonary problems. TB, heart disease.

The eggs of Karungozhi have an ideal nutritive especially for old people and high BP victims (since the cholesterol content in lower and free amino acids are higher than that of other kinds of birds).

General properties

“குட்டங் கடிகிருமி கோரவாதக் கூட்டம்

மட்டிடாச் சூலையறு மாதரசே – துட்ட

கிரந்தியொடு புண்வலிபோங் கேளுட லுக்கு

மருந்து கருங் கோழியூன் வை”

இந்த பாடலின்படி கோர வாதம் போகும் என்பதனால் கருங்கோழி, வாத நோய்களை போக்குவதில் சிறந்தது என அறியலாம்.

2. கருஞ்சீரகம்

Botanical Name	:	Nigella sativa
Family	:	Ranunculaceae
Suvai	:	Kaippu
Thanmai	:	Veppam
Pirivu	:	Karppu
Part usd	:	Seed

ACTIONS :

Carminative

Diuretic

Emmenagogue

Galactogogue

Anthelmintic

Stomachic

Parasiticide

Emollient

CONSTITUENTS

The seed contains,

Fixed oil – 37.5%

Volatile oil – 1.5%

And albumin mucilage, metamarbin, melanthin,helleborin and Arabic acid

Prolein – 26.7%, Oil 22.6%, ash 4.86% and total carbohydrate 40.0. The major unsaturated fatty acids were linokic acid (50.3 – 49.2%) , oleic acid (25.0 – 23.7%) and the main saturatted fatty acid is palmitic acid (17.2 – 18.4%), myristic, myristoleic, palmitoleic, margaric, margaroleic, stearic, linolenic, arachidic, eicosenoic and lignoceric acids were also detected and major components of which are thymoquinone, nigellone and nigllidine.

நற்சீரகம்

Botanical Name	:	Cuminum cymimum
Family	:	Umbelliferae
Suvai	:	Karppu, Inippu
Thanmai	:	Thatpam
Pirivu	:	Inippu
Part used	:	Seed

ACTIONS :

Carminative

Stimulant

Stomachic

Astringent

CONSTITUENTS

α – pinene, 1-8 cineole and linaloor isolatedfrom the volatile (latif et al., 2007) Two sesquiter penoid glucosides, cuminoside A and b and z-c methyl-D-erythritol 1-O-β-D- glucopyranoside, z-c methyl-D-erythritol 3-O-β-D-glucopyranoside, z-c methyl-D-erythritol 4-O-β-D- glucopyranoside and alkyl glycosides have been isolated from the seed.

4. சாதிபத்ரி

Botanical Name	:	Myristica fragrans
Family	:	Myrtacece
Suvai	:	Thuvarppu,Karppu
Thanmai	:	Veppam
Pirivu	:	Karppu

ACTIONS :

Stimulant

Carminative

Narcotic

Aromatic

Aphrodisiac

Tonic

பெருங்காயம்

Botanical Name	:	Ferula asafoetid
Family	:	umbelliferae

Suvai	:	Kaippu, karakarappu
Thanmai	:	Veppam
Pirivu	:	Karppu
Part used	:	Oleogumresin

ACTIONS

Stimulant

Carminative

Antispasmodic

Expectorant

Laxative

Anthelmintic

Diuretic

Aphrodisae

Emmenagogue

CONSTITUENTS

The oleo-gum resins taste and smell are like surphur due to the presence of sulphur compounds like disulphides, symmetric tri and tetrasulphides, Glucuronic acid. Galactose, arabinosed, rhamnose, unbelliferone, farnesiferoles A,B, and C ferulic acid, coumarine derivaties foetidin and kamolonol have been isolated from oleo gum resin

மிளகு

Botanical Name	:	Piper nigrum
Family	:	Piper acede
Suvai	:	Kaippu,karppu
Thanmai	:	Veppam
Pirivu	:	Karppu
Part used	:	Seed, climber

ACTIONS :

Acrid

Carminative

Antiperiodic

Rubefacient

Stimulant

Resolvent

Antivatha

Antidote

CONSTITUENTS

Pyrrolidine alkamide, isopiperolein B, retrofractamide A, Pipercide, Pipercha barride D, Pellitorin, dehdropipernonaline, ZE,4E, 8Z isobutyl – eicosatrienamide, pellitorine, trachyone, pergumidiene and isopiperolein B have been isolated from fruit. Essential oil contained monoterpene hydro carbons, sabinene, β – pinene, limonene, furthermore

terpinene, β – pinene, myrcene, 3-carene, borneol, carvone, carvacrol,1,8-cineol, linalool, sesqui – terpenes, β – caryophyllene, humulene, β – bisabolone, aryophyllene oxide ketone, phnylether, eugend, mristicin and safrole, bisalkaloids, dipiperamides D and E

Black pepper oil can be used to help in the treatment of **pain relief**, **rheumatism,** increase circulation, exhaustion and **muscular ache**.

ஓமம்

Botanical Name	:	Trachyspermum roxburghianum
Suvai	:	karppu
Thanmai	:	Veppam
Pirivu	:	Karppu
Part used	:	Seed

ACTIONS :

Stomachic

Antispasmodic

Carminative

Antiseptic

Stimulant

Tonic

Sialogogue

CONSTITUENTS

The essential oil of the seed contained terpinene, p – cymene, α – pinene, thymol and carvacrol. The seed has steroptis, cumene, thymine, aminoacids, threonine, calcium, iron, starch, tannins and dietary fibre. The seed contain an essential oil containing about 50% thymol which is strong germicide, **antispasmodic** and fungicide. Thymol is also used in toothpaste and perfumery

வசம்பு

Botanical Name : Acorus calamus

Suvai : karppu

Thanmai : Veppam

Pirivu : Karppu

Part used : Root

ACTIONS :

Stimulant

Stomachic

Antispasmodic

Carminative

Nauseant

Emetic

Disinfectant

பேரரத்தை:

Botanical Name : Alpina galanga

Family : Zingiberaceae

Suvai : karppu

Thanmai : Veppam

Pirivu : Karppu

Part used : Root

ACTIONS :

Expectorant

Febrifuge

Stomachic

CONSTITUENTS

1'S- 1autoxychavicol acetate, P – hydroxycinnamaldehyde and methane were isolated from the rhizome and to possess various biological activies such as antitumour. The essential oil contained monoterpenes, monoterpene alcohols, esters, sesquiterpenes, methyleugenol, eugenol, acetate, chavicol and chavicol acetate were identified.

செங்கத்தாரிப் பட்டை:

Botanical Name : Capparis Sepiaraia

Family : Capparidace

Suvai : Thuvarppu

Thanmai : Thatpam

Part used : Bark.

ACTIONS :

Stomachic

Tonic

CONSTITUENTS:

Capparine, cappariline and capparinine were isolated from roots.

நாயுருவி

Botanical Name : Achyranthes aspera

Family : Amaranthaceae

Suvai : Kaippu,Thuvarppu,Karppu

Thanmai : Veppam

Pirivu : Karppu

Part used : Root

ACTIONS :

Astringent

Diuretic

Alterative

Antiperiodic

CONSTITUENTS:

Aliphatic dihydroxy ketone, characterized as 36,47 dihydroxy henpenta contan – 4-one, tritria contanol, achyrathine pantatriacontan, 6-pentatria contanone, hexatria contane and triacontane

பேரரத்தை

Botanical Name	:	Alpinia galangal
Family	:	Zinigiberaceae.
Suvai	:	Karppu
Thanmai	:	Veppam
Pirivu	:	Karppu
Part used	:	Root

ACTIONS

Expectorant

Febrifuge

Stomachic

CONSTITUENTS:

1’S-1 acetoxychavicol acetate, P-hydroxycinnamadehyde and nethane were isolated from the rhizome and to possess various biological activities such as antitumour. The essential oil contained monoterpenes, monoterpene alcohols, esters, sesquiterpenes, methyleugenol, eugenol acetate, chaviol and chavical acetate were identified.

கார்போகரிசி

Botanical Name	:	Psoralia corylifolia
Family	:	Fabaceae
Suvai	:	Kaippu
Thanmai	:	Veppam

ACTIONS:

Laxative

Stimulant

CONSTITUENTS:

Psoralidin, bakuchicin, psoralin, angelicin, Psoracorylifols A-E, Prenylflavonoids, corylifols A and C were isolated from the seeds and they showed significant antibacterial activities against a number of Gram(-) and Gram(+) bacteria. Isobavachalwne neobavaisoflavone, isopsoralen and psoralen were obtained from the seed.

ஏலக்காய்

Botanical Name	:	Elatteria Cardamomum
Suvai	:	Karppu
Thanmai	:	Veppam
Pirivu	:	Karppu
Part used	:	Seed

ACTIONS:

Stimulant

Carminativc

Stomachic

சுக்கு

Botanical Name : Zingiber officinale

Family : Zingiberaceae

Suvai : Karppu

Thanmai : Veppam

Pirivu : Karppu

Part used : Rhizome (dried)

ACTIONS:

Stimulant

Stomachic

Carminative.

CONSTITUENTS:

Ginger is known to contain a number of potentially bioactive substances mainly gingerols shogabls, sesquiterpenes, B-bisabliene, Zingiberene, Zingiberol, Curcumene, monoterpenes, geraial and neral

திப்புலி

Botanical Name	:	Piper longum
Family	:	Piperaceae.
Suvai	:	Inippu
Thanmai	:	Veppam
Pirivu	:	Inippu
Part used	:	Seed.

ACTIONS:

Astringent

Expectorant

Laxativc

Tonic.

CONSTITUENTS:

Guineensine, pipernonaline, pellitorine, piperine, piperanine, piperidine alkaloids pipermonaline, piperundecalidine brachyamide A, brachyamide B and brachystine and piperlonguminine were isolated from fruit. Piperlongumine and piperlingumine and sesamin isolated from fruits.

இலவங்கப்பட்டை

Botanical Name	:	Cinnamomum Verum
Suvai	:	Karppu, Inippu
Thanmai	:	Thatpam
Pi rivu	:	Inippu

Part used : Bark

ACTIONS:

Stimulant

Carminative

Aphrodisiac

பூண்டு

Botainical Name : Allium Sativum

Family : Liliaceae

Suvai : Karppu

Thanmai : Veppam

Pirivu : Karppu

Part used : Tuber

ACTIONS:

Carminative

Stomachic

Tonic

Alterative

Stimiulant

Expectorart

Diurctic

Anthelmintic

CONSTITUENTS:

Sulphus compounds including allicin, premethanethiosulfonate Dithun derivatives dially sulphide, diallyl trisulfide, proto-eruboside B, Spirostanol, sativoside B1 analogue, eruboside B, rutin, quercetin 3 glucoside, quercitrin myricetin, luteolin, quercetin, apigenin, kaempferol and isorhamnetin

புன்முருங்கை

Botanical Name : Moringla tinctoria

Family : Rubianceae

Part used : Root.

பறங்கிப்பட்டை:

Botaical Name: Smilax china

Family :Liliaceae

Suvai : Inippu

Thanmai : Thatpam

Pirivu : Inippu

Part used : Tuber

ACTIONS:

Alterative

Antisyphilitic

Aphrodisiac

Depurative

CONSTITOENTS:

Six major stilbenes and flavonoids namelytaxifolin-3-0-glycoside, piceid, oxyresveratrd, engeletin, resevertrol and scirpusin A have been isolated from root tubers **saponins, smilaxin**, prosapogemin A, dioscin, gracilin, dioscin, pseudoprotodioscin, methugracillin and methyl protodioscin have been reported from root.

சங்கன்வேர்

Botanical Name	:	Azima tetracantha
Suvai	:	Kaippu
Thanmai	:	Veppam
Pirivu	:	Kaippu
Part used	:	Root

ACTIONS

Diuretic

Stimulant

Astringent

Tonic

Antiperiodic

Expectorant

PREPARATION AND PROPERTIES OF TRIAL MEDICINE

Name of the trial medicine : KARUNGOZHI CHOORANAM

EXTERNAL DRUG:

VIDAMUTTI THYLAM

INGREDIENTS:

Etti fruit juice	:	Required quantity
Gingelly oil	:	1.3 it
Castor oil	:	1.3 it
Lime juice	:	1.3 it
Etti Kottai powder	:	1.3 it

METHOD OF PREPARATION:

“எட்டியுறும் பழத்தையொரு பானையதி

னிரைத்தனி லிசைந்தகாடி

விட்டொருதாற் றினமுறு வைத்ததைக்கை

யாற்பிசைந்து விளம்புதூசாற்

றிட்டமுற வடிகட்டிக் கொண்டதொரு

குறுணியதிற் றிதழ்நல்ண்ணெய்

யிட்டமுற விரண்டுபடி யொருபடியோ

மணக்கெண்ணெ யிசையச்சேர

சேரலுமிச் சம்பழச் சாறொருபடியுஞ்

சேர்ந்ததன்பின் செப்புமெட்டிப்

பாரமுறுங் கொட்டையதும் படியிடித்துப்

போட்டெரித்துப் பதத்திற் காய்ச்சிச்

சாரமுற லிடித்துக் கொ ளினதன்பேரில்

விடமுட்டித் தைலமாகும்

பாருலகோர்க் கிதைத் தொட்டுத் தடவிடில்லா

தங்களெல்லாம் பறக்கும்பாரே

METHOD OF PREPARATION:

Etti Fruits are soaled in kaddi (Vinegar) for 4 days. Now it is crushed to get juice. Then it is added with gingelly oil, castor oil and lime juice and powdered form of etti kottai.Then it is heated till the drugs tum to red. Then filter the oil and use it for external purposes. Three following books also describe and deal with the same condition.

ANNEXTURE - II

BIO - CHEMICAL ANALYSIS OF

KARUNGOZHI CHOORANAM

Preparation of the extract:

5gms of **KARUNGOZHI CHOORANAM** was weighed accurately and placed in a 250ml clean beaker. Then 50 ml distilled water is added to it and dissolved well. Then it was boiled well for about 10 minutes. It was cooled and filtered in a 100 ml volumetric flask and then it is made up to 100ml with distilled water. This fluid is taken for analysis.

Qualitative analysis

S.No.	Experiment	Observation	Inference
1.	**Test for calcium** 2ml of the above prepared extract is taken in a clean test tube. To this add 2 ml of 4% ammonium oxalate solution.	A white precipitate is formed.	Indicates the presence of calcium.
2.	**Test for sulphate:** 2ml of the extract is added to 5% barium chloride solution.	A white precipitate is formed.	Indicates the **presence** of sulphate.
3.	**Test for chloride** The extract is treated with silver nitrate solution.	A white precipitate is formed.	Indicates the **presence** of chloride.
4.	**Test for carbonate** The substance is treated with concentrated HCl.	No brisk effervescence is formed.	**Absence** of carbonate.

5.	**Test for Starch** The extract is added with potassium ferro cyanide.	No blue colour is formed.	Absence of starch.
6.	**Test for iron Ferric** The extract is treated with concentrated glacial acetic acid and potassium ferro cyanide.	No blue colour is formed.	**Absence** of ferric iron.
7.	**Test for iron Ferrous:** The extract is treated with concentrated nitric acid and ammonium thio cyanate.	Blood red colour is formed.	Indicates the **presence of** ferrous iron.
8.	**Test for phosphate** The extract is treated with ammonium molybdate and concentrated nitric acid.	Yellow precipitate is formed.	Indicates the **presence of phosphate.**
9.	**Test for albumin** The extract is treated with Esbach's reagent.	No yellow precipitate is formed.	**Absence** of Albumin.
10.	**Test for Tannic acid** The extract is treated with ferric chloride reagent.	No Blue black precipitate is formed	**Absence** of Tannic acid
11.	**Test for unsaturation** Potassium permanganate solution is added to the extract.	It gets decolorized.	Indicates the **presence of** unsaturated compound.
12.	**Test for the reducing sugar** 5ml of benedict's qualitative solution is taken in a test tube and allowed to boil for 2 mts and added 8-10 drops of the extract and again boil it for 2 mts.	No Colour change occurs.	**Absence** of reducing sugar

13.	**Test for amino acid:** One or two drops of the extract are placed on a filter paper and dried it well. After drying, 1% ninhydrin is sprayed over the same and dried it well.	Violet colour is formed.	Indicates the **presence of** Amino acid.
14.	**Test for zinc:** The extract is treated with potassium ferrocyanide	No white precipitate is formed	**Absence** of zinc

Result:

The trial drug **KARUNGOZHI CHOORANAM** contains,

1. calcium
2. sulphate
3. chloride
4. ferrous iron
5. phosphate
6. unsaturated compound
7. amino acid.

ANNEXURE – III

GOVT SIDDHA MEDICAL COLLEGE,

PALAYAMKOTTAI

PHARMACOLOGICAL ANALYSIS

ANALGESIC STUDY OF

KARUNGOZHI CHOORANAM

Aim:

To study the effects of analgesic action on albino rates by tail flick method.

Instruments:

Analgesiometer using heated nicrome wire as the source of stimulus.

Procedure:

Two groups of rates on either sex were selected, each group having three rats and each rat was put inside a rat holder with the tail projecting out fully. The tip of the tail was kept over the nicrome wire of the analgesiometer. To heat the nicrome wire by switching in on and at the same time starting a stopwatch. The time takes for the rat to flick the tail was noted. This was kept as the control volume.

Paracetamol was administered at a dose of 20 mg/100gm of a body weight oraly to the test group. The reaction time was noted after the administration half an hour and one hour and the average is calculated.

When a rat fails to flick the tail, it should be continued beyond eight seconds to avoid injury.

The result of drug treated group and control group were tabulated and compared.

STUDY OF ANALGESIC EFFECT USING THE DRUG KARUNGOZHI CHOORNAM

Group	Dose / 100mg Body weight	Initial reading (in Sec)	After ½ hour (in Sec)	After 1 ½ hour (in Sec)	Mean Difference
Control	Water 2 ml	2	2	2	2
Standard	Paracetomol 20 mg	2.5	4.5	6.5	6.5
Test drug	Karungozhi chooranam 100mg	2.5	4.0	5.8	5.8

Inference:

The trial drug has **significant analgesic action**.

ACUTE ANTI – INFLAMMATORY ACTIVITY IN RATS BY HIND – PAW METHOD

Aim:

To demonstrate the acute anti-inflammatory activity of **Karungozhi Chooranam** in albino rats by Hind-paw method.

Procedure:

Nine Albino rats weighing 100-150gm were taken and divided into three groups and each group consisting three rats.

First group was kept as control land received water. Second group received lbuprofen at a dose of 20mg/100gm – body weight. Third group animals received **Karungozhi Choornam** suspension at a dose of 200mg/ 100 gm – body weight.

Before administration of drugs, the Hind-paw upto the tibio-tarsal junction in mercury plethysmograph. Soon after the measurement at the drugs were administered. One hour after the administration of drugs a sub – cutaneous injection of 0.1ml of 1%/W/N of carrageenin in water was made into planter surface of both the Hind-paw of each rat.

Three hours after carrageenin injection, the Hind-paw volume was measured once again. Difference between the initial and final value were noted and compared.

This method is more suitable for studying anti-inflammatory activity in acute inflammation.

EFFECTS OF KARUNGOZHI CHOORANAM IN ACUTE ANTI – INFLAMMATORY ACTIVITIES

Group	**Dose volume orally**	**Initial reading**	**Final reading**	**Mean difference**	**Percentage Inflammation**	**Percentage Inhibition**
Control	Water 2 ml	0.55	1.4	0.85	100	-
Standard	Ibuprofen 20mg/100gm	0.55	0.75	0.20	23.5	76.5
Test drug	Karungozhi chooranam 100mg / 100gm	0.57	0.89	0.32	37.6	62.4

Result:

The drug **Karungozhi Chooranam** has **Significant acute anti-inflammatory action.**

CHRONIC ANTI-INFLAMMATORY STUDY BY COTTON – PELLETS GRANULOMA METHOD

Drug:

Karungozhi Chooranam

Aim:

To study the chronic ani-inflammatory activity of the drug in albino rats by cotton pellets implantation (granuloma) method.

Procedures:

Cotton pellets each weighing long was prepared and sterilized in an autoclave for about one hour under 15 lbs atmosphere pressure. Nine Albino rats weighing between 100-200gm were selected and were divided into 3 groups. Each rat was anaesthetized with ether and cotton pellets were implanted subcutaneously in the groin, two in each side.

From the day of implantation, one group of animals received **Karungozhi Chooranam** at a dose of 200mg/100gm of body weight.

On the eighth day the rats were sacrificed and the pellets were removed weighed. Then they were put in an incubator at 60^0C-80^0C and then weighed. The concordant weight was noted for all groups and compared.

THE EFFECT OF KARUNGOZHI CHOORANAM IN CHRONIC ANTI – INFLAMMATORY STUDY

Group	**Dose given orally**	**Pellet Weight**	**Pellet Weight of the Granuloma of drugs**	**Percentage inflammation**	**Percentage inhibition**
Control	Water 1ml	10mg	250 mg	100	-
Standard	Ibuprofen 20mg/100gm body weight	10mg	55mg	22	78
Test drug	100mg/100gm body weight	10 mg	98mg	40	60

Inference:

The drug **Karungozhi Chooranam** shows **Significant chronic anti – inflammatory action**.

ACUTE ANTI - INFLAMMATORY STUDY ON VIDAMUTTI THYLAM (EXTERNAL USE) BY HIND-PAW METHOD IN ALBINO RATS

Aim:

To study the acute anti-inflammatory activity of the test drug

Vidamutti thylam

Procedure:

Six healthy albino rats weighing 100-150gm were taken and divided into three groups, each consisting of 2 rats.

First group was kept as control by giving distilled water of 2ml/100gm of body weight. The second group was kept as test group. The third group was given the standard drug.

Before application of the test drug the Hind-paw volume of all the rats were measured. This was done by dipping the Hind-paw (up to the tibio-femoral junction) into a mercury plethysmograph. While dipping the Hind-paw, by pulling the syringe piston, the level of mercury in the centre small tube was made to coincide with red marking and reading was noted from the plethysmograph.

One hour later, a sub-cutaneous injection of 0.1ml of l%(w/r) Carrageenin water made into plantar surface of both Hind-paw of each rat. To the second (last) group **Vidamutti thylam** was topically applied for three times over the inflammed surface in a thin layer for every 15mts for an hour. To the other group no drug was applied over the inflammed surface.

Three hour after injection the Hind-paw volume was measured once again. The difference between the initial and final volume would show the amount of inflammation. Taking the volume in the control group as 100% of inflammation, anti – inflammatory effect of the test group is calculated.

EFFECT OF VIDAMUTTI THYLAM

Group	Drugs	Dose 100 gm of body weight	Initial value	Final value	Difference	Percentage Inflammation	Percentage Inhibition
Control	Water	2ml	0.55	1.4	0.85	100	-
Standard	Ibuprofen	20mg	0.55	0.75	0.20	29.4	70.6
Test drug	Vidamutti Thylam	Ext	0.525	0.8	0.275	40.44	59.56

Inference:

The test drug has **significant anti-inflammatory action** externally.

ANALGESIC STUDY OF VIDAMUTTI THYLAM

Aim:

To study the effects of analgesic action on albino rates by tail flick method.

Instruments:

Analgesiometer using heated nicrome wire as the source of stimulus.

Procedure:

Two groups of rates on either sex were selected, each group having three rats and each rat was put inside a rat holder with the tail projecting out fully. The tip of the tail was kept over the nicrome wire of the analgesiometer. To heat the nicrome wire by switching in on and at the same time starting a stopwatch. The time takes for the rat to flick the tail was noted. This was kept as the control volume.

Paracetamol was administered at a dose of 20 mg/100gm of a body weight oraly to the test group. The reaction time was noted after the administration half an hour and one hour and the average is calculated.

When a rat fails to flick the tail, it should be continued beyond eight seconds to avoid injury.

The result of drug treated group and control group were tabulated and compared.

STUDY OF ANALGESIC EFFECT USING THE DRUG VIDAMUTTI THYLAM

Group	**Dose / 100mg Body weight**	**Initial reading (in Sec)**	**After ½ hour (in Sec)**	**After 1 ½ hour (in Sec)**	**Mean Difference**
Control	Water 2 ml	2	2	2	2
Standard	Paracetomol 20 mg	2.5	4.5	6.5	6.5
Test Drug	2ml	2	3	5	5

Inference:

The trial drug has **significant analgesic action.**

ANNEXURE – IV

ASSESSMENT FORMS

FORM I - SCREENING FORM

FORM II - CONSENT FORM

FORM III - CASE PROFORMA

FORM IV - LABORATORY INVESTIGATIONS

FORM V - CLINICAL ASSESSMENT

FORM VI - PATIENT WITHDRAWAL FORM

FORM VII - DRUG COMPLIANCE FORM

GOVERNMENT SIDDHA MEDICAL COLLEGE & HOSPITAL

PALAYAMKOTTAI.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

AN OPEN CLINICAL TRIAL OF KARUNGOZHI CHOORANAM & VIDAMUTTI THYLAM FOR AZHAL KEEL VAAYU (OSTEOARTHRITIS)

FORM I –SCREENING FORM

1. OP/ IP No: 2. BED No:

3. Sl. No: 4. NAME:

5. AGE: 6. GENDER:

7. OCCUPATION: 8. SOCIAL STATUS

9. DATE OF ADMISSION: 10. DATE OF DISCHARGE:

11. POSTAL ADDRESS:

I. INCLUSION CRITERIA:

1. Sex: Both Male and Female.
2. Pain and swelling present in knee joints.
3. Crepitations present in knee joints.
4. Early morning stiffness.
5. Tenderness

II. EXCLUSION CRITERIA:

1. Diabetes Mellitus
2. Hypertension
3. Cardiac diseases
4. Pregnancy and Lactation
5. Patients with any other serious illness
6. Peptic ulcer
7. Severe trauma
8. Any other systemic diseases

III. WITHDRAWAL CRITERIA:

1. Development of any adverse reaction (ADR
2. Occurrence of any other systemic illness.

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(OSTEOARTHRITIS)

Form: II CONSENT FORM

CERTIFICATE BY INVESTIGATOR

I certify that I have disclosed all the details about the study in the terms readily understood by the patient.

Signature……. Date……

Name……

CONSENT BY PATIENT

I have been informed to my satisfaction, by the attending physician, the purpose of the clinical trial, and the nature of drug treatment and follow-up including the laboratory investigations to be performed to monitor and safeguard my body functions.

I am aware of my right to opt out of the trial at any time during the course of the trial without having to give the reasons for doing so.

I, exercising my free power of choice, hereby give my consent to be included as a subject in the clinical trial of ‘KARUNGOZHI CHOORANAM (Internal drug & VIDAMUTTI THYLAM (External drug)’ for the treatment of ‘Azhal keel vaayu’ (osteoarthritis).

Signature……. Date…….

Name……

அரசினர் சித்த மருத்துவக் கல்லூரி மற்றும் மருத்துவமனை,பாளையங்கோட்டை

பட்டமேற்படிப்பு சிறப்புமருத்துவத்துறை

“கருங்கோழி சூரணம்” மற்றும் “விடமுட்டி தைலம்” இவற்றின்

பரிகரிப்புத்திறனைக் கண்டறியும் மருத்துவ ஆய்வு

ஒப்புதல் படிவம்

ஆய்வாளரால் சான்றளிக்கப்பட்டது

நான் இந்த ஆய்வைக் குறித்த அனைத்து விபரங்களையும் நோயாளிக்கு புரியும் வகையில் எடுத்துரைத்தேன் என உறுதியளிக்கிறேன்.

தேதி: கையொப்பம்:

இடம்: பெயர்:

நோயாளியின் ஒப்புதல்

என்னிடம் இந்த மருத்துவ ஆய்வின் காரணத்தையும் மருந்தின் தன்மை மற்றும் மருத்துவ வழிமுறையைப் பற்றியும் தொடர்ந்து எனது உடல் இயக்கத்தை கண்காணிக்கவும், அதனைப் பாதுகாக்கவும் பயன்படும் மருத்துவ ஆய்வுக்கூட பரிசோதனைகள் பற்றியும் திருப்தி அளிக்கும் வகையில் ஆய்வு மருத்துவரால் விளக்கிக் கூறப்பட்டது.

நான் இந்த மருத்துவ ஆய்வின் போது காரணம் எதுவும் கூறாமல் எப்பொழுது வேண்டுமானாலும் இந்த ஆய்விலிருந்து என்னை விடுவித்துக் கொள்ளும் உரிமையை தெரிந்திருக்கின்றேன்.

நான் என்னுடைய சுதந்திரமாகத் தேர்வு செய்யும் உரிமையைக் கொண்டு அழல் கீல் வாயு என்னும் நோய்க்கான ‘கருங்கோழி சூரணம் ” மற்றும் ‘ விடமுட்டி தைலம் “ ஆகியவற்றின் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கு என்னை உட்படுத்த ஒப்புதல் அளிக்கிறேன்.

தேதி: கையொப்பம்:

இடம்: பெயர்:

தேதி: சாட்சிக்காரர் கையொப்பம்:

இடம்: பெயர்

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AN OPEN CLINICAL TRIAL OF KARUNGOZHI CHOORANAM &

VIDAMUTTI THYLAM FOR AZHAL KEEL VAAYU

(OSTEOARTHRITIS)

FORM III – CASE PROFORMA

1. OP/ IP No: 2. BED No: 3. Sl. No:

4. NAME: 5. AGE: 6. GENDER:

7. OCCUPATION: 8. SOCIAL STATUS

9. DATE OF ADMISSION: 10. DATE OF DISCHARGE:

11. POSTAL ADDRESS:

Lecturer **HOD**

12. COMPLAINTS & DURATION:

13. HISTORY OF PRESENT ILLNESS:

14. PAST HISTORY:

15. FAMILY HISTORY:

16. MENSTRUAL HISTORY (If applicable):

17. HABITS:	**Yes**	**No**
1. Smoker	☐	☐
2. Alcoholic	☐	☐
3. Betel nut chewer	☐	☐
4. Non-Veg /Vegetarian	☐	☐
5. Drug addiction	☐	☐

18. GENERAL EXAMINATION:

1. Body weight [Kg] :
2. Height [cm] :
3. Body Temperature [^{o}F] :
4. Blood Pressure (mmHg) :
5. Pulse Rate /min. :
6. Heart Rate /min. :
7. Respiratory Rate /min. :

	Yes	No
8. Pallor	: ☐	☐
9. Jaundice	: ☐	☐
10.Clubbing	: ☐	☐
11.Cyanosis	: ☐	☐
12.Pedal Oedema	: ☐	☐
13.Lymphadenopathy	: ☐	☐
14.Jugular venous pulsation:	☐	☐

19. CLINICAL EXAMINATION OF KNEE JOINT:

I. INSPECTION	**Present**	**Absent**	
1. Swelling	☐	☐	……
2. Muscle wasting	☐	☐	……
3. Deformity	☐	☐	……

II. PALPATION:	**Present**	**Absent**	
1. Tenderness	☐	☐	……..
2. Swelling	☐	☐	……

3. Crepitations ☐ ☐ ……

4. Warmth ☐ ☐ .....……

III. MOVEMENTS:

1. Restriction of Movements in the Knee joint: Full ☐ Partial ☐ No ☐

2. KNEE: PAIN MUSCULAR SPASM ROM

	Yes	**No**	**Yes**	**No**	**Normal**	**Reduced**
i. Flexion	☐	☐	☐	☐	☐	☐
ii. Extension	☐	☐	☐	☐	☐	☐

3. NEUROLOGICAL EXAMINATION:

i. Sensation Normal ☐ Abnormal ☐

ii. Tone Normal ☐ Abno☐

iii. Power Normal ☐ Abnormal ☐

iv.Muscle wasting Present ☐ Absent ☐

4. REFLEXES: **Normal** **Exaggerated**

i. Knee jerk ☐ ☐

ii. Ankle jerk ☐ ☐

20. CLINICAL ASSESSMENT:

I. PAIN:

A. Pain in the knee joints: No ☐ Mild ☐ Moderate ☐ Severe ☐

i. Onset Sudden ☐ Gradual ☐

ii. Nature: Local ☐ Diffuse ☐ Others ☐

B. Nature of pain Shooting ☐ Burning ☐ Others ☐

	YES	***NO***
C. Pain during movements	☐	☐
II. Morning stiffness	☐	☐

III.Tenderness ☐ ☐

III. Swelling ☐ ☐

IV. Restricted joint movements ☐ ☐

21. EXAMINATION OF OTHER SYSTEMS:

	Normal	**Abnormal**
1. CVS	☐	☐
2. RS	☐	☐
3. CNS	☐	☐
4. ABDOMEN	☐	☐
5. GENITO-URINARY	☐	☐

SIDDHA ASPECTS

1. NILAM:

1. Kurinji ☐ 2. Mullai ☐ 3. Marutham ☐ 4. Neithal ☐ 5. Paalai ☐

2 . KAALAM:

1. Kaar Kaalam ☐ 2. Koothir Kaalam ☐ 3. Munpani Kaalam ☐

4. Pinpani Kaalam ☐ 5. Ilavenir Kaalam ☐ 6. Muduvenir Kaalam ☐

3. YAAKKAI:

1. Vatham ☐ 2. Pitham ☐ 3. Kabam ☐

4. Vathapitham ☐ 5. Pithavatham ☐ 6. Kabavatham ☐

7. Vathakabam ☐ 8. Pithakabam ☐ 9. Kabapitham ☐

4. GUNAM:

1. Sathuvam ☐ 2. Rasatham ☐ 3. Thamasam ☐

5. IYMPORIGAL: **Normal** **Affected**

1. Mei ☐ ☐ ……..

2. Vaai ☐ ☐ ……..

3. Kan ☐ ☐ ……

4. Mookku ☐ ☐ ……..

5. Sevi ☐ ☐ ……..

6. KANMENDHIRIUM / KANMAVIDAYAM:

Normal **Affected**

1. Kai ☐ ☐ ……...

2. Kaal ☐ ☐ ……...

3. Vaai ☐ ☐ ……..

4. Eruvaai ☐ ☐ ……..

5. Karuvaai ☐ ☐ ……..

7. UYIR THATHUKKAL:

I. VATHAM: **Normal** **Affected**

1. Piraanan ☐ ☐ ……

2. Abaanan ☐ ☐ ……

3. Viyaanan ☐ ☐ ……

4. Uthaanan ☐ ☐ ……

5. Samaanan ☐ ☐ ……

6. Naagan ☐ ☐ ……

7. Koorman ☐ ☐ ……

8. Kirukaran ☐ ☐ ……

9. Devathathan ☐ ☐ ……

10. Dhananjeyan ☐ ☐ ……

II. PITHAM : **Normal** **Affected**

1. Analam ☐ ☐ ……

2. Ranjagam ☐ ☐ ……

3. Saathagam ☐ ☐ ……..

4. Aalosagam ☐ ☐ ……

5. Prasagam ☐ ☐ ……..

III. KABAM: **Normal** **Affected**

1. Avalambagam ☐ ☐ ……
2. Kilethagam ☐ ☐ ……
3. Pothagam ☐ ☐ ……
4. Tharpagam ☐ ☐ ……..
5. Santhigam ☐ ☐ ……

8. UDAL THATHUKKAL: Normal Affected

1. Saaram ☐ ☐ ……
2. Senneer ☐ ☐ ……
3. Oon ☐ ☐ ……
4. Kozhuppu ☐ ☐ ……
5. Enbu ☐ ☐ ……
6. Moolai ☐ ☐ ……
7. Sukkilam/Suronitham ☐ ☐ ……

9. ENVAGAI THERVUGAL:

1 **. Naadi** …….

Normal Affected

2. **Sparisam** ☐ ☐ ……..
3. **Naa** ☐ ☐ ……
4. **Niram** ☐ ☐ ……..
5. **Mozhi** ☐ ☐ ……..

6. **Vizhi** ☐ ☐ ……..

7. **Malam**

a. Niram ☐ ☐ ……..

b. Nurai ☐ ☐ ……..

c. Kirumi ☐ ☐ ……..

d. Thanmai: i. Irugal ☐ ii. Ilagal ☐

8. Moothiram:

I. NEERKKURI Normal Affected

a. Niram ☐ ☐ ……..

b . Manam ☐ ☐ ……..

c. Edai ☐ ☐ ……..

d. Nurai ☐ ☐ ……..

e. Enjal ☐ ☐ ……..

II. NEIKKURI: ……

Vatha Neer ☐ Pitha Neer ☐ Kaba Neer ☐

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VIDAMUTTI THYLAM FOR AZHAL KEEL VAAYU

(OSTEOARTHRITIS)

Form IV - LABORATORY INVESTIGATIONS

1. OP/ IP No: 2. BED No: 3. Sl. No:

4. NAME: 5. AGE: 6. GENDER:

7. OCCUPATION: 8. SOCIAL STATUS

9. DATE OF ENROLMENT: 10. DATE OF DISCHARGE:

11. POSTAL ADDRESS:

Lecturer **HOD**

Date:

I. BLOOD:

1. TC : (Cells/Cumm)
2. DC (%): N L M E
3. ESR (mm) : ½ hr 1 hr
4. Hb:
5. Total RBC:
6. Blood Sugar: a) Fasting b) Post prandial
7. Kidney function tests:

   Blood urea: Serum creatinine:
8. Lipid profile:

   HDL: LDL: VLDL:

   Total Cholesterol : TGL:
9. Liver Function tests:

   SGOT: SGPT: Alk. Phosphatase:

   Albumin: Globulin: Total Protein:

   Serum Bilirubin: Total Direct Indirect :

II. URINE:

1. Albumin :
2. Sugar :
3. Epithelial cells :
4. Pus cells :
5. Red blood cells :
6. Casts/Crystals :

III. MOTION:

1. Ova :
2. Cyst :
3. Occult blood :
4. Pus cells :

IV. X-RAY:

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VIDAMUTTI THYLAM FOR AZHAL KEEL VAAYU

(OSTEOARTHRITIS)

FORM V – CLINICAL ASSESSMENT

1. OP/ IP No: 2. BED No: 3. Sl. No:

4. NAME: 5. AGE: 6. GENDER:

7. OCCUPATION: 8. SOCIAL STATUS

9. DATE OF ADMISSION: 10. DATE OF DISCHARGE:

11. POSTAL ADDRESS:

Lecturer **HOD**

CLINICAL EXAMINATION OF KNEE JOINT:

I. INSPECTION: **Present** **Absent**

1. Swelling ☐ ☐ ……

2. Muscle wasting ☐ ☐ ……

3. Deformity ☐ ☐ ……

II. PALPATION: **Present** **Absent**

1. Tenderness ☐ ☐ ……

2. Swelling ☐ ☐ ……

3. Crepitations ☐ ☐ ……

4. Warmth ☐ ☐

……

III. MOVEMENTS:

1. Restriction of Movements in the Knee joint: Full ☐ Partial ☐ No ☐

2. KNEE: PAIN MUSCULAR SPASM ROM

	Yes	**No**	**Yes**	**No**	**Normal**	**Reduced**
i. Flexion	☐	☐	☐	☐	☐	☐
ii. Extension	☐	☐	☐	☐	☐	☐

3. NEUROLOGICAL EXAMINATION:

i. Sensation: Normal ☐ Abnormal ☐ ……...

ii. Tone Normal ☐ Abnormal ☐ ……..

iii. Power Normal ☐ Abnormal ☐ ..……

iv. Muscle wasting: Present ☐ Absent ☐ …….

4. REFLEXES:	**Normal**	**Exaggerated**
i. Knee jerk	☐	☐
ii. Ankle jerk	☐	☐

20. CLINICAL ASSESSMENT:

I. PAIN:

A. Pain in the knee joints: No ☐ Mild ☐ Moderate ☐ Severe ☐

i. Onset Sudden ☐ Gradual ☐

ii. Nature: Local ☐ Diffuse ☐ Others ☐

B. Nature of pain Shooting ☐ Burning ☐ Others ☐

	Yes	**No**
C. Pain during movements	☐	☐
II. Morning stiffness	☐	☐
III.Tenderness	☐	☐
III. Swelling	☐	☐
IV. Restricted joint movements	☐	☐

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VIDAMUTTI THYLAM FOR AZHAL KEEL VAAYU

(OSTEOARTHRITIS)

FORM - VI PATIENT WITHDRAWAL FORM

1. OP / IP No …… 2. S.No. …… 3.Date: ……

4. Name …….. 5. Age …… 6. Gender ……

7. Postal address:

Complaints and Duration:

Irregular treatment:

Other causes:

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FORM VII - DRUG COMPLIANCE FORM

Name of the Drug: KARUNGOZHI CHOORANAM

Drugs issued: ……(mgs/Grams)

Drugs returned: ……(mgs/Grams)

S.NO	DATE	DRUG TAKEN TIME		
		MORNING/TIME	AFTERNOON/TIME	NIGHT/TIME
Day 1				
Day 2				
Day 3				
Day 4				
..				

..				
Up to day 48				

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

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INSTITUTIONAL ETHICS COMMITTEE (I.E.C)
GOVERNMENT SIDDHA MEDICAL COLLEGE
PALAYAMKOTTAI

No. 10 /IEC/GSMC/2011-12 DT. 6.6.12

CERTIFICATE

This to certify that the project title A STUDY ON AZHAL KEEL VAYU

DISSERTATION FOR THE PARTIAL FULFILMENT FOR THE AWARD

OF DEGREE OF DOCTOR OF MEDICINE BY DR. C. GNANAPON MALAR

BRANCH III SIRAPPU MARUTHUVAM REG. NO: 221040002 2010-2013

has been approved by the IEC on condition basis.

Name of Member secretary

Dr.R.KAMALAM, M.D.(S)

6/6/12.

Signature with date

(Kindly make sure that minutes of the meeting duly signed by all the participants are maintained by office)